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ANO-RECTAL FISTULAE*

RAYMOND L. MURDOCH, M.D.

OKLAHOMA CITY

An ano-rectal fistula is an infected tract between the skin and the anus or rectum. If the tract fails to be complete but opens only on the skin surface it is called a blind external fistula; if it opens only into the anal or rectal lumen it is called a blind internal fistula. Clinical usage sanctions this nomenclature though strictly speaking, if they positively are not complete, then they should be called peri-anal, peri-rectal, or ischio-rectal sinuses. In further support of the clinical nomenclature of fistula, it may be said that a minute opening, making it a fistula, that is, opening from a viscus, is present in most cases even though not demonstrated. Pennington gave us a very practical classification of fistulae of this region as follows: (1) Anal, opening into the anus. (2) ano-rectal, opening at the pectinate line; (3) rectal, opening into the rectum proper. Examination with the proctoscope or anoscope will aid in determining the type of fistula present. The majority of my cases have been between twenty and fifty years of age. The oldest was seventy-eight years; the youngest six months. The male patients outnumber the female three to two.

Fistula is usually a sequella of an abscess. Inflammation in an anal crypt at the ano-rectal junction, or an anal fissure is usually the precursor of the abscess. The infecting organism is usually some of those constantly present in the bowel content, but I have seen fistula follow gonorrheal cryptitis and proctitis. Trauma of the ano-rectal junction often is an initiating factor and a debilitating condition such as tuberculosis, diabetes, or syphilis, predisposes to the development of the local infection. When the abscess discharges and its cavity is filled in, an infected tract lined by granulation tissue and surrounded by fibrous tissue, remains. The torn and infected crypt, or fissure, is usually in the posterior midline. The inflammation may travel through the lymphatics or by dissolution of tissue into the space behind the anus, or into the ischio-rectal spaces. Pus may dissect from the space behind the anus into both ischio-rectal spaces, forming a horseshoe-shaped abscess with one or numerous discharging points on each side. In most cases there is a single internal opening.

Contraction of the walls of the abscess cavity in the ischio-rectal fossa results often in a tortuous infected tract. Temporary occlusion of the opening of this tract results in the collection of pus under tension again, with malaise and the recurrent pain, swelling, and discharge so well known in the history of these cases. The kinking of the tract near its internal opening or its occlusion temporarily, may be the reason the examining probe or dyes do not always enter the rectum, and yet the minute internal opening is present. Re-infection with fecal particles through a small internal opening will explain the chronic course or continued existence of many fistulae. It has become a habit to look for tuberculosis in patients with ano-rectal fistulae (and it might be said in an aside that it has become a habit to look for lues, recent Neisserian, or chancroidal infection in those with multiple anal excoriations or fissures).

Symptoms: A tender or painful discharging point or points in the region of the anus is the usual complaint of the pa-

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tient. The purulent secretion, even though slight, may be very disagreeable as to odor. The area of tenderness is increased in cases of multiple fistulous openings. A so-called blind external fistula may cause practically no complaint while its orifice remains open. As indicated previously, I feel that most fistulae have at least a minute internal opening. The larger this is and the more liquid the bowel content, the more pain and discharge the patient will have. The pathology at the internal opening may cause an uneasy sensation or tickling in the anal canal or pruritus. Intense pruritus is present in some of the cases having a minute superficial submuco-cutaneous tract or tracts. Bladder symptoms, sacral backache, or pain in the hip or down the thigh is occasionally present. Toxic absorption from infection, manifested by rheumatic symptoms and arthritis, in my experience, has occurred oftener, in the presence of the small pus pocket associated with cryptitis or a blind internal sinus, than with a complete fistula, or even the large more acute ischio-rectal abscesses. Rectal operations on numbers of the former class have been followed by improvement or cure of the rheumatism.

Diagnosis: The patient has, months or years before, developed rectal discomfort, pain, fever and swelling, the worst of which subsided when the abscess burst or was incised. There are recurrences when discharge from the tract is blocked. Close inspection may be necessary to see a depressed external opening or slit in a previous incision, but on the other hand a small tab or granulation tissue may mark the external opening. Pressure about the opening usually brings a show of pus, though thin epithelium occasionally bridges over the opening. Deep palpation in most cases follows the indurated tract upward in the anus. A pit, depression, or merely a hypersensitive spot (anal crypt), may or may not be felt, indicating the internal opening. Very rarely there is more than one internal opening, this usually representing the secondary rupture of a communicating submucus or mural abscess at a higher point. Positive evidence of an internal opening is afforded when methylene blue, seven parts, and hydrogen peroxide, one part, gently injected externally runs from the anus or spots gauze which has been laid into the rectal lumen as a diagnostic procedure. Probing should be done with caution. It is painful without anaesthesia; under anaesthesia it is valuable but great care should be taken to avoid false passages. Complex fistulae are followed more surely by injecting ten per cent bismuth subnitrate in vaseline and taking a stereoscopic x-ray. Undue force should not be used in making the injection. Both the pictures and the bismuth remaining in place may be helpful in locating the multiple tracts at the operation, which should be done within a few days. A general observation has been made, that most cases having external openings more than about two inches distant from the anus have a tract leading to an internal opening at the posterior ano-rectal commissure. This is true also of those external openings nearer than two inches if they open posterior to a line bisecting the anus. The short tracts which open in the anterior half of the anal region usually lead in a radial direction to a corresponding anterior anal crypt. About 50% of the internal openings are posterior, 20% anterior, and the remainder laterally placed.

Sinuses in the coccygeal or sacrococcygeal region may be from an infected pilonidal cyst. Points in the differential diagnosis are a normal appearance through the proctoscope, no induration on rectal digital examination, negative x-ray of the bony structures, perhaps a post-anal dimple from or near which one or more openings are present evidently connected with tracts forming a mass over the sacro-coccygeal region. Since tracts of epithelium extend out from the palpable mass of the cyst, a wide block removal dissecting down on the bone especially removing tissue over the coccyx, is necessary. Some surgeons advise excising the coccyx at the same time. Where too much of the sacrum lies bare I have followed Lahey in about half my cases in sliding a gluteal skin to fascia flap over to the central position overlying the bone. The resultant defect over the buttock fills in rapidly and a broad tender scar over the weight bearing part of the bone is avoided.

There is a higher percentage of ano-rectal fistulae in persons with pulmonary tuberculosis than in others. Yeomans says that fistula is a complication in about 6 per cent of sanatorium cases of pulmonary tuberculosis. It takes work to prove that a given fistula has in its walls, tuberculous inflammation. Many smears or scrapings of the tract will not show the bacilli. Microscopic study of fistulous tissue freed from surface contamination from the bowel contents (which frequently contains tubercle bacilli), and culture of the tissue preparation and inoculation

of guinea pigs are the methods of investigating accurately. Forty per cent of the cases are considered tuberculous in some charity clinics, while some proctologists conclude about five per cent of fistulae coming to their offices are due to tuberculosis locally. After giving full weight to the history and to x-ray and other examination of the lungs, as well as to local tissue examinations, L. A. Buie thought 5.4% of a series of his fistulae studied had tuberculosis as a cause. He compiled figures from a number of continental hospitals for tuberculosis and found that about 3% of their patients had anal fistula or ischio-rectal abscess.

A. J. Chisholm, investigating by cultures and guinea pig inoculation of fistulous tissue, found it tuberculous only in the patients having also some type of pulmonary tuberculosis. But his positive findings in them were high—77% in those having also active pulmonary tuberculosis and 55% in those having also inactive (arrested or fibroid) pulmonary tuberculosis.

Given a pulmonary tuberculosis case, he may have only a simple pyogenic fistula, or we may fail to demonstrate local tuberculosis in his fistula, despite its being there. If the edge of the opening is undermined, the granulations unhealthy looking and the discharge thin, then especially in a tuberculous patient we feel that it is a tuberculous fistula.

The history may impress us in considering a fistula tuberculous. A mass less painful than the usual one, moveable in the ischio-rectal fossa, changeable or slowly increasing in size, becomes fixed and ruptures either back into the bowel or out on the skin; this over a period of time without the usual acute fever and pain attendant upon the development of pyogenic infection in this region. The point of discharge back into the bowel wall may be higher than the ano-rectal level where most of the pyogenic tracts connect. Pale unhealthy looking granulation tissue is seen at the orifices. Whether tuberculous or not, the fistulae should be operated, and with proper operation we are curing these fistulae in tuberculous patients.

The tubercle bacilli often come through uninjured bowel mucosa, according to Calmette. However, tuberculosis of the seminal vesicles, coccyx or pelvic bones may be the antecedent of the ischio-rectal infection.

If there is extensive infiltration, excision should not be attempted. Fistulotomy of the external part will maintain drainage until such time as connective tissue barriers have been better formed. Rough manipulation of tuberculous tissue and cutting through it is to be avoided. Nature builds a dense fibrous tissue wall in the chronic cases about the granulation tissue lining the fistulous tract. This should be excised by the knife cutting in healthy tissue in the case of simple straight fistula; more often the tracts are tortuous with much inflammatory reaction and are best treated primarily by incision to promote drainage and allay inflammation. The cautery is recommended for its sterilizing effect on this tissue by some men, but by others is not used. I prefer the cautery especially for its hemostatic effect in situations where otherwise much clamping would have to be done in infected tissue. Exposure to the sun or ultraviolet light is helpful to the healing of these wounds postoperative. Irradiated petrolatum has been beneficial to some of them.

Under differential diagnosis should be mentioned actinomycosis of this region and also the fistulae that occur in connection with malignancy of the rectum, chronic inflammatory stricture of the rectum, and syphilitic lesions. About one-fourth of the fistula cases in my rectal clinic at the University Hospital have had positive blood Wassermanns.

Treatment: A few small simple fistulae have been cured by injection of various irritants. If improvement is not evident promptly the patient should not be subjected to interminable injections or packings. The use of an elastic ligature threaded through the fistula is very seldom indicated.

Practically the treatment of fistula in ano is operation. It may be either incision (fistulotomy) or excision (fistulectomy) with or without a variable amount of closure by suturing. The distal part of the tract may be excised and a silk ligature threaded through the remainder encircling the involved part of the sphincter, this latter to be incised at a later time when the distal part has filled in and the granulation will prevent undue retraction of sphincter ends when they are severed. Fistulectomy under antiseptic precautions of a superficial distal tract can be followed by suture of that part of the wound. On the other hand a lateral fistulous tract often goes very deep being the remains of the abscess in the ischio-rectal or supra-levat-

or spaces. This has to be kept open and will heal if the other tract from the anorectal junction is laid open and the reinfection thus stopped. Deep incision into the anus can be made in the midline posteriorly. Judgment must be exercised as to the amount of sphincter that can be cut at the other parts of the circumference at a single operation. The sphincter should not be cut obliquely, but at right angles, and never in more than one place at the same operation. Other procedures to prevent undue retraction of the cut ends of the sphincter are suturing of the ends until granulation tissue sets them in place, and primary suturing of the cut ends to firm tissue underlying them.

I have not had success with the Elting procedure to close the internal opening by mobilization and suture of the bowel wall. However, I will describe a procedure which might be considered akin to it in some respects, which has given me uniformly good results:

Several years ago I began saving the continuity of considerable sphincter muscle at the site of fistulectomy. Previously I had usually followed the practice in rectal surgery of cutting through everything lying between the fistula and the lumen of the bowel. By using smaller hemostats and scissors I have been able to make a more minute dissection and excision of the tract without severing the overlying sphincter. A slight amount of freeing of the bowel wall above is done. It is then possible to place the sphincter upward and stitch the rectal wall downward over it fixing the sphincter against solid tissue in a somewhat higher but nevertheless good functioning position. The final result is a more normal anal contour without the notched defect sometimes marked after the usual operation. Since development of this way of saving sphincter I have been able to operate in a single trip to surgery on two separate fistulae on opposite sides of the anus of the same patient who previously would have had to recover from one, and then return in a month or so for another anaesthetic and operation on the other side.

Inflammation is attended by destruction of tissue. Accordingly the patient who has had an extensive abscess and fistula must not expect, either with or without surgical treatment, to have a supple anus functioning in exactly the same way it did before inflammation developed there. A well functioning intact external sphincter is necessary to retain gas, so that the patient who develops inflammation with or without incision here must not expect too much as to this. Its control is variable. However, practically all patients as they come with internal openings not too high in the bowel, can be assured that their fistula can be operated without resulting incontinence. This will require an intelligent operation, in two stages if necessary. I have been surprised in examining some cases that have anal distortion from previous multiple fistulae and operations, to note the remarkable grip which the levator ani muscles are exerting and the statement of the patient that he holds the bowel action perfectly.

Incising a fistula which goes through a portion of sphincter, will in some cases initiate the prolapse of some rectal mucous membrane or a small hemorrhoid, hitherto symptomless. I try to anticipate this possible complication when operating on a chronic fistula without especial purulent discharge, and remove any definitely redundant mucous membrane or hemorrhoid. This is done when the fistula operation has been comparatively clean and not too extensive. In the presence of virulent pus, necessary drainage only is done.

An anus which has suffered loss of tissue due to inflammatory destruction will not be perfect anatomically, but increasingly our patients are getting good function and are well satisfied.

As one of them wrote me several months post-operative, "The cut place does not hurt and has healed up and as a whole my rectum works alright."

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Dr. Allen, Tulsa: With few exceptions, every anal or rectal fistula is preceded by an abscess which has its origin in the anus and rectum. Cultures from this abscess usually show a predominant organism, the streptococcus, staphyloccus, bacillus coli, tuberculosis bacillus, and occasionally the gonococcic and bacillus saphrogenes. These are the most frequent organisms. I was interested in seeing Dr. Murdoch place the emphasis on the incidence of tuberculosis bacillus. It seems to me that that point ought to be stressed, because most insurance companies feel that when a fistula is reported in the history of a case it is just bound to be tuberculous. I think they are

over-cautions. It is all right to investigate that, but it seems to me they are overestimating it in the general run of cases. In Houston, Harp, who has rather a large clinic, places the incidence there between two and four per cent. Hirschman places it between five and ten per cent. On the other hand, Miles of London places it as high as fourteen per cent. Of course, it depends a good deal on the character of patients one is seeing, but in the general run of cases it seems to me that the incidence ascribed to the profession at large is far above the real incidence of it. As to the other infections, one might stress the source of these infections, the organisms like the staphylococcus and streptococcus. As I say, this comes from the anus and rectum, but from where does that come? I think we are overlooking our infections from above. We don't stop to investigate what our infections are in the mouth. We so frequently see staphylococcus and streptococcus infections in the teeth and gums, the tonsils and sinuses, and I feel that if those things are not properly taken care of the infection may occur from them. No doubt there are a lot of peri-rectal abscess and fistulas that recur because of maybe a new crypt or new hemorrhoid has gotten infected simply because the infection upstairs has not been properly taken care of, and I feel that the rectal examination is not complete until these infections up there have been looked after and cleared up because your rectal sphincter is not always going to heal up properly until these infections above have really been cleared up as they should. That is particularly true, I think, of the streptococcus. Speaking of the treatment, I feel that the surgery of these fistulas should be well planned. A simple fistula requires very little planning, of course, but when it comes to the complicated fistula, that should be studied thoroughly and, as Dr. Murdoch has said, an x-ray should be made of the fistula after previously injecting it with bismuth or something of that kind because a picture will often times clear up the situation and make it very much easier for us to get rid of the fistula entirely. Dudley Smith states that the outstanding reasons for failure of fistula operation are: First, failure to find the internal opening; second, failure to follow all tracts to their termini and to open and excise them; third, faulty after-treatment; fourth, a failure to preserve the function of the bowel.

CLOSING DISCUSSION: *Dr. R. L. Murdoch.*

The question about tuberculosis is academic rather than practical because we are curing most of them also. A general or inhalation anaesthetic is not used. The tuberculous patient will recover quicker if a careful operation on his fistula rids him of the toxic absorption there.

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"Sickness is a matter intimately personal. It is a time when sincerity of dealing cannot be compromised nor human feelings flouted.

"How disturbing, then, is the thought of having a third person or alien party exercise an influence on the relationship between the patient and his physician, the two persons who, above all others, are most vitally concerned when sickness enters the home.

"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the current new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. 'Scare head' advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were 'signed up' and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimented medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties concerned."—From Mead Johnson & Company's Announcement in Hygeia, September, 1934.

WHAT SHOULD BE OUR ATTITUDE TOWARD THE CHILD WITH A CEREBRAL BIRTH PALSY?*

BEN H. NICHOLSON, M.D.
OKLAHOMA CITY

There is an enormous number of children with spastic paralyses who, in the course of their wanderings seeking aid, pass at one time or another through the pediatrician's office. This group has been generally classified as the birth injured—a classification which seems to be unwarranted and which is finding disfavor. These children do at some time have a careful study for evidence of pathological processes which could be removed or corrected, such as tumors, cysts, syphilis, etc. The results of the examination are usually negative for such conditions, in spite of the more recent encephalographic studies. After careful study a more or less hopeless prognosis is given, but parents continue in their hope and are bitter toward scientific medicine and actively hostile toward the obstetrician, whom they think responsible for the injury.

In recent years investigators have been unable to establish any relationship between trauma and the symmetrical spastic paralyses discovered shortly after birth. This group constitutes by far the largest number of birth palsies (235 out of 280 of Ford's[1] series). He concluded that the congenital diplegias "are not to be attributed to meningeal hemorrhage at birth, but are the result of various pathological processes of intra-uterine origin."

"Four principal arguments support this conclusion. Meningeal hemorrhage is in at least half the cases unilateral, and when bilateral is almost always unequal on the two sides; cerebral diplegias are, with very few exceptions, bilaterally symmetrical. The heads of diplegics are usually either definitely microcephalic or slightly below normal size; meningeal hemorrhage causes rapid enlargement of the head. Children who are known to have intracranial bleeding at birth or in infancy do not develop diplegia; lastly, the pathological anatomy of true congenital diplegia is such that it cannot be reconciled with any theory of birth injury."

In a discussion on the subject, Patten[2] concluded: "The frequent occurrence of bilateral motor involvement, together with defect in intelligence, indicates something more than the effects of trauma or vascular accidents in the neurologic conditions of the new-born infant. There exists probably a developmental defect or arrest which concerns either the integrity of the cortical cells or the proper myelinization of the corticospinal tracts and associated fibers."

The actual part that injury plays does not greatly matter in this discussion, but no amount of argument in favor of the origin of cerebral palsies on the basis of intra-uterine disease or defect can minimize the importance of obstetrical care of the pregnant and parturient woman. Certainly an important factor in prevention must be prenatal care, particularly as regards diet and hygiene. Concrete proof of this exists in the case reported by Kugelmass[3] of the woman who, while eating a low protein diet because of hypertension, was delivered of four living babies, all of whom died of hemorrhagic disease of the new-born. She proceeded to and through her fifth pregnancy on an adequate protein intake and was delivered of a normal child who went through the neonatal period without mishap and is still living. A limited protein diet accompanied her sixth pregnancy and she was delivered of another living baby who died of hemorrhagic disease of the new-born.

Crothers[4] states that in considering cerebral palsies we are dealing with one of three main types of disturbance or with any two or all three in combination—mental defect, disorders of cortical control and disturbances of associated movement. Experience with these children has taught observers that if the mentality remains intact with proper care and training they will overcome to a large extent the spasticity and incoordination. This comes about probably because unimpaired motor neurons upon reeducation assume the function of those which have been irreparably damaged.

Our problem is first to classify the dis-

*Read before the Oklahoma Pediatric Society, Forty-second Annual Meeting, Tulsa, 1934.

orders in our minds as best we can in an effort to determine whether or not there is enough residue to justify an attempt at reeducation. So often this is made doubly hard by the attitude of the parents whose minds have been confused by many suggestions as to cause and treatment. This is particularly true if it is an only child where comparison with an older child is not possible.

In taking a history and examining the patient, one must not be deceived by the appearance of the patient. As Carlson put it: "There is sometimes difficulty in swallowing because of spasm of the pharyngeal and tongue muscles; speech is difficult, and not infrequently profuse salivation with drooling tends to reflect against the normal mentality of the patient. In spite of the disability brought about by the disturbance, the mental state usually remains normal.'"

It matters not at what age a child's development may take place, the sequence in progress is the same. While the mental state, as Carlson says, may remain normal, certainly the mental development must to a large measure be dependent on motor experiences. The inability to sit alone, to use the hands in grasping objects, and to use the feet and legs in turning, crawling and standing must be a tremendous handicap in developing the higher centers. When we consider that the diplegic's experiences have come entirely from his special senses, lying flat on his back in bed, and when we add to this a spasm of the muscles of deglutition and phonation which makes drooling necessary and speech practically impossible, there is little wonder that he has an idiotic appearance. In addition, there is often a spasm of the facial muscles which causes the child to grimace and change his expression without cause.

With such a child it is certainly no easy matter to determine whether the physiologic residue is sufficient to justify an attempt at reeducation. Certain criteria have been established to help in this decision. Hempelmann,[4] reporting from the Shriners' Hospital in St. Louis, recognizes the following criteria as being most favorable for the best results: "(1) The child must be of normal or nearly normal mentality; (2) he must give a history of improvement in his condition; (3) he must have no athetosis or marked incoordination of movements other than those due to spasticity, and (4) he must be willing and old enough to cooperate in the postoperative exercises."

Hobhouse[5] thinks the following place the the child beyond the reach of effective treatment: (1) Evidence of progressive disease; (2) the presence of a profound degree of mental defect which he thinks may be for practical purposes determined by apathy and lack of desire to make movements or handle objects; (3) persistent occurrence of fits; (4) athetoid and choreiform movements; (5) a very high degree of muscular rigidity which makes active movements impossible.

Aside from the above, probaly one of the most valuable indications for treatment is the history of improvement in the child's condition. Care must be taken to ask specific questions about progress because so often the wish is parent to the thought in the mother's mind. Of course, a definite microcephalic or a very marked hydrocephalic, particularly if the hydrocephalus is progressing, is beyond hope of training.

Assuming that we have a child who is a diplegic and according to the criteria set down above we find that he can probably be reeducated, what can we do about it? Of course, we are interested in what other people are doing, but we are more interested in how the principles involved can be applied here. As far as I know, there are no private institutions in this state which are adequately equipped and the personnel of which is sufficiently trained to undertake the task of reeducation, and if there were, few people could take advantage of it. The Crippled Childrens' Hospital is not large enough to hospitalize these children for any appreciable length of time. We are more or less left to our own resources with the help of a physiotherapist, if one is available.

All of the people who write on the subject feel that the most important element is an obstinate optimism on the part of the patient, parent and doctor. The treatment should be directed along three lines: (1) Training; (2) avoiding or preventing contractures, (3) surgical.

It must be remembered that the defect is in the brain and not in the limb, and that no amount of passive treatment seems to be effective in preventing contractures. Active movements, even though purely reflex, seem to be the only ones effective in producing results. As active purposeful movements increase the child's motor control seems to develop and some undam-

aged neurone apparently takes over the function of the defective one.

The most effective operative procedures seem to be those directed toward the overcoming of contractures and overcoming severe adductor spasm.

How much we can accomplish, I do not know, but we are attempting at the Childrens' Hospital dispensary to select a few of the most suitable patients and with the help of the physiotherapy department to institute a program of reeducation. We are hoping that we can teach the mother to carry out a simple plan of exercises, beginning with the neck and shoulders. During infancy, of course, the exercises are limited by position because the infant can only be on his back. The first step is to get the child in a sitting posture to be maintained by support which will in time overcome the spasm of the back muscles and give the child a chance to use his hands in handling objects. Warm baths give relaxation, which is necessary; massage does no harm but electrical stimulation is contra-indicated since it only aggravates the existing condition of hypertonus.

CONCLUSION

1. The majority of cerebral birth palsies fall into the group of cerebral spastic diplegia.

2. In the light of recent invesigations these can no longer be attributed to faulty obstetrics.

3. While there is obviously a loss of motor control, the mentality may be normal though development is retarded.

4. In children whose mentality is near normal, who do not have repeated epileptic seizures, and who do not have athetoid or choreiform movements, the outlook in reeducation is good.

5. This reeducation must be carried out optimistically by all concerned along sound physiotherapy principles.

6. We, as physicians, must be as certain as possible before we make a diagnosis of idiocy and give a hopeless prognosis.

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THERAPY OF COOK COUNTY HOSPITAL: THERAPY OF ANTHRAX

Bernard Fantus, Chicago (Journal A. M. A., Sept. 22, 1934), considers prophylaxis in animals and man in his discussion of the therapy of anthrax. Under treatment he states that anthrax antiserum should be administered at the earliest possible moment, locally as well as systemically. Systemic administration in nonsepticemic cases is carried out by means of intravenous injections of 50, 100 or 200 cc. of antiserum every twelve to six hours (according to the severity of the case) until the disease is controlled; then intramuscular injections are given for several days longer. In septicemic cases 200 cc. of antiserum is injected intravenously every three hours until the blood culture is negative. Local treatment consists of absolute rest, elevation, and warm boric acid compresses until the eschar separates. No excision or cauterization is necessary. If an abscess forms, mere incision is enough. In properly managed cases the wound heals with a surprisingly small scar.

R. B. DAVIS CO. COCOMALT

The great strides taken by the medical profession in the last few years in the prevention of rickets can be traced directly to the newer knowledge and understanding of Vitamin D. Because of the discovery of Vitamin D, rickets—once a familiar childhood menace—is now rapidly becoming a rare disease in civilized countries.

Recent experiments prove beyond a shadow of a doubt that the amount of Vitamin D in the dietary of the pregnant woman determines to a large extent the quality of the teeth, the skeleton, and the perfection of form of the coming child. Thus, by the systematic "feeding" of Vitamin D and calcium to the expectant mother it is possible to safeguard the child—and the mother, too—from malformation of the bone structure.

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THE CINCH SHORTENING METHOD FOR EXTRA-OCULAR MUSCLES*

HARVEY O. RANDEL, M.D.
OKMULGEE

In writing a paper on the cinch method of shortening, I am not entirely devoid of selfish motives. It has often been said that if one wishes to acquire knowledge of a subject, a good method of procedure is to write about it.

The physiopathology of squint, and its surgical treatment, has always been a subject of unusual interest to me. The numerous hypothesis as to its etiology, and the various surgical procedures submitted for its correction, lead to the belief that the solution of this interesting problem has not as yet been solved.

During the year of 1930-31 I was fortunate in being so situated as to examine, prior to operation and follow through to their completion, over one hundred cases of squint, operated on by the cinch method of shortening. This series included the private cases of my preceptors, and also the clinic cases at Stanford University. Collaborating with my preceptors the details of this series of cases were published in the Archives of Ophthalmology, May, 1931.[1]

It is not the purpose of this paper to consider the physiopathology of squint. However, the originator of the method stresses a spastic element, that is, a habit impulse of contraction and relaxation according to Sherrington's[2] law of reciprocal innervation, i. e., stimulation to the center of one movement produces inhibition of the center of the opposing movement.

In this manner explanation is offered as to the different degrees of effect from the same amount of shortening. The advantages of the cinch method of shortening were emphasized by O'Connor[3], its originator, in 1916, before the Section of Ophthalmology of the American Medical Association. After ten years of practical application, and additional observation, he presented a paper before the Academy of Ophthalmology[4], in which he further simplifies the operation and offers improvements, as to the technique.

*Read before the Section on Eye, Ear, Nose and Throat, Forty-second Annual Meeting, Tulsa, 1934.

It is this improved technique I am using. The disadvantages of the procedure, advocated in 1916, have been eliminated. It is simply a tendon shortening, accomplished by splitting the tendon into as many strands as is consistent with the amount of shortening desired. While no attempt is made to convert arc degrees of measurement into millimeters of shortening, approximately one millimeter of shortening is obtained from each medium dermal suture, double looped, dividing the tendon into four equal strands.

McCool[5] showed, from wet specimens in enucleated eyes, that as much shortening as is ever desirable or safe is obtainable by the cinch method.

Many ardent enthusiastic members of the profession have supported O'Connor in his claim that from a standpoint of efficiency, safety, certainty of action and surgical principles involved, no operation yet devised can compare with it. Some of the advantages he enumerates are: The shortening is permanent and can be accomplished without the disadvantages or risks of other operations. It permits accurate calibration of both tropias and phorias. The sutures are transferred upon alternate counter-pressure in the same plane, the tendon strands being weaker than the sutures are looped around them, thereby constricting the sutures and not themselves. The operation can be performed safely at any age, and in addition eliminates the possibility of over-correction and increase of the original deformity. No binocular bandage is required, and the monocular pad may be removed after twenty-four hours.

In operating the phorias, the immediate effect after operation will be less than the effect on the succeeding day, because of the temporary paresis from pulling. Unless the phoria shows an under correction immediately after operation, do not pad the eye. Encourage the patient to use the eyes as much as possible, in order to prevent the bulbar conjunctiva from becoming adherent to the tendon, thus ex-

aggerating the effect. The effect of allowing the muscle to make its normal excursions, by not splinting with binocular bandage, prevents the formation of adhesions.

The operation may be combined with a partial tenotomy, or, in older cases, recession may be employed where structural changes are present, or the opponent shows an excess of tonus or contracture. In children, where the operation is most frequently employed, I combine the operation with a central tenotomy of the opponent, in order to cause a temporary paresis and functional loss. A mere stretching would probably accomplish the same purpose.

In all probability central tenotomies, unless pulled against by an advancement, resection or shortening, apparently have no permanent effect. However, when combined with the cinch shortening operation is much more pronounced than if the two operations were performed separately.

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BLUE SCLERA*

L. C. KUYRKENDALL, M.D.
McALESTER

There seems to be a difference of opinion as regards the first reports on blue sclera, but the earliest date mentioned is 1839 when Von Ammon first described this condition. Lobstein is credited first having reported blue sclera in 1841. He also reported the condition of fragile bones in 1833. However, the condition of blue sclera and fragile bones were first reported as being connected in 1896 by Spurway. The two were next reported as being associated in 1900 by A. Eddowes. The sclera is described as being "deep porcelain blue" or "a porcelain or leaden blue" or as a "china blue". The entire sclera is blue, but is most intense toward the anterior portion over the ciliary body. If the blue sclera patient does not die in infancy, longevity does not seem to be influenced by the presence of blue sclerotics.

Three theories have been advanced as the causative factor: First, mesenchymal; second, increase of pigmentation of pigment cells of sclera, and third, increased transparency of the sclera due to lack of fibrous tissue from absence of lime salts. These cases are of interest, but are rarely seen primarily by the oculist. The family physician or surgeon may be consulted about the patient for the first time when the child suffers a fracture or the parents may discover the sclera is blue and seek information as to the cause of it. It is essential that the pediatrician, the general practitioner, and the surgeon know of the syndrome of blue sclera, fragile bones, and deafness which is otherwise designated as blue sclera, fragilitas ossium and oto-sclerosis. Ruttin pointed out that while fractures occur in childhood, deafness only comes in the adult life. It has been rather definitely shown that at least one parent must have blue sclerotics in order that the child inherit this condition, although there have been a few sporadic cases found where neither parent has blue sclerae. It has also been demonstrated that fifty per cent of the offspring of a parent with blue sclerae will inherit this condition, and that fifty per cent of the offspring of these will have a blue sclera and fragile bones, while those offspring whose sclera are not blue will have normal offspring. In other words, the parent must have blue sclera before the child can inherit the condition. While practically all of these patients have brittle bones and suffer numerous fractures, a very few escape the broken bones, but are susceptible to sprains, strains and dislocations.

Spurway[1] calls attention to the fact that

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Eddowes, in 1900, reported blue sclerotics and fragile bones and states that he, Spurway, had previously, 1896, reported in the British Medical Journal the history of three or four generations of a single family with fragile bones, numerous fractures and common symptoms of blue sclerotics.

Constans[3] reports two cases of blue sclera with brittle bones with a history of fractures in one case and numerous sprains in the other. His conclusion is that blue sclera and fragile bones accompany each other. They may or may not have deafness associated. Also, that it, blue sclera, is only transmitted by a parent with blue sclera and that they may or may not transmit the condition. He does not think syphilis a factor.

Goin[3] claims there is a difference between idiopathic osteopsathyrosis and fragilitas ossium, and says they are two phases of the same disease. The non-hereditary form occurs without blue sclera, although he reports one case occurring with blue sclera.

Smart[4] reports a case of scleritis which resisted or at least responded slowly to all methods of treatment until he had a blood calcium test made and found it very low. Upon placing her upon treatment to raise the blood calcium to normal her scleritis immediately healed. The sclera was a bluish or lavender color, following repeated attacks.

McCable[5] reports a very interesting case in which the baby at birth had blue sclera and numerous fractures of the extremities in various stages of callus formation showing the child had suffered these fractures in utero.

Knapp[6] reports a case of a female, age four. In this case the grandmother, aunt, and mother have blue sclera and are the only members of the family affected. One sister is not affected. The patient has blue sclerotics only. No fractures or deafness. Blood calcium high normal. The lids of the right eye are light blue in color. Slate blue color of sclera of right in marked contrast to that of the left eye. Iris dull brown, left eye slightly bluish.

Key[7] in his paper states that the depth of blue varies in different individuals of the same family. That the ciliary body can usually be definitely outlined and is not due to pigmentation, but to the transparency of the sclera allowing the blue uvea to shine through. Peters thinks the sclera is thinner than normal. Key quotes from Conlon's paper (Boston Medical and Surgical Journal, 169:16, 1913), in which Conlon does not think the sclera is thin, but is transparent or else there would be buphthalmos, which has not been found. Freidenberg thinks the transparency is due to absence of lime salts in the connective tissue. Buchanan (Tr. Ophth. Soc. 23:267, 1903: Ophthalmoscope 8:685, 1910) examined the eye of Bronson's case and reported the eye normal for a child of that age (11 months). Embryotoxin has been found in a number of cases. Key reports that keratoconus was found in one case, coloboma in one case, cataract in two cases, astigmatism and hypermetropia in six cases. Myopia was found five times. The fundi were normal in all cases and ocular tension was normal. Slight blueness of sclera may be present in anemia, T. B., and certain forms of heart disease. Bronson, Herman, Ostheimer, Hoffman, Gutzeit and others have found sporadic cases of blue sclera and fragile bones where neither parent was affected, and these cases did not transmit to their offspring. Key says that "hereditary hypoplasia of the mesenchyme" is characterized by blue sclera, brittle bones, deformities, small stature, hypermobility of the joints and a weakness of fibrous structures, while "hypoplasia of mesenchyme seems to be an anomaly of development rather than a derangement of metabolism."

Bowcock[8] and Lewis give a short review of the history of blue sclera and brittle bones and report the case of a girl, age four years, with no family history of blue sclera or brittle bones. The father and mother are living. Exhaustive laboratory and x-ray examinations were made. "The blue color of the sclorae is explained by a majority of authors as an abnormal transparency of the sclerotic coat of the eye which permits the blue uvea to show through." They state that authorities agree that deafness first appears in early life or later. (I am unable to confirm this as to early life.) It appears that liability to fractures becomes less at puberty or as young adult life is reached, often times with spontaneous improvement or total absence of fractures. They summarize as follows: "A sporadic case of brittle bones and blue sclerae is reported. The clinical picture conforms to cases previously described. In addition, an apparently benign glycosuria is present. Serum calcium determinations gave figures at the upper limits of normal or slightly above. Estimation of urine and stool calcium and

phosphorus gave evidence of abnormally high percentages of both in the stool, in such proportions as to suggest the possibility of absorption from the intestinal tract.

Shugrue[9] and Rockwood report four cases of blue sclerotics, brittle bones and deafness. They state that the disease is hereditary and that the patient may have one, two, or all symptoms, e. g., blue sclerae, brittle bones and deafness; also that where blue sclera alone is present they usually die in infancy, but when the blue sclerais manifest in adolescence they are associated with brittle bones and that later deafness may come on. In the family of Case 1, age 20, male, reported, were seven of twelve with blue sclerotics including paternal grandfather, father, and five of nine children. Father had all three symptoms. One sister had blue sclerae and brittle bones. Two other sisters are deaf. One brother had blue sclera and brittle bones. The serum calcium and organic phosphorus was about normal. Case 2, male, age 47, has three brothers and four sisters, none of whom is affected. He has glycosuria with serum calcium and inorganic phosphorus about normal. Case 3, female, age 52, had all three symptoms. Three generations preceding her had had three symptoms. The father of patient had blue sclerotics and was the father of eleven children, six of whom have blue sclerae. Patient has five children, three with and two without the syndrome. Two with blue sclerae died in infancy. They state: "The most plausible explanation for the cases of blue sclerotics with brittle bones and deafness is that they are caused by a congenital mesenchymal defect, since all the structures involved in the syndrome come originally from the anlage. However, this theory does not explain why other tissues of mesenchymal origin, such as the heart, blood and lymph vessels, bone marrow and lymph nodes, are not usually affected." In Case 4, fifty per cent of the children with blue sclerae transmitted it to fifty per cent of their children. Those children of parents with blue sclerotics that did not inherit blue sclerotics did not transmit blue sclerotics to their children. One of their cases definitely follows the Mendelian law.

In Cleminson's[10] case the iris was brown and sclera greyish-blue. It is for the most part a resume of the literature that had been written previous to this paper on blue sclera, otosclerosis and osteogenesis imperfecta. He quotes Eddowes, who published a short paper in 1900 in the "British Medical Journal," who said: "I would suggest that the transparency of the sclerotics indicates a want of quantity or quality of the fibrous tissue forming the framework of the various organs of the body and probably explains the want of spring or toughness in the bones of these peculiar individuals." Cleminson states that "these cases are interesting in that the three constituent symptoms are all due to disturbances in the development of the mesenchyme, from which the bones and fibrous tissues, including the sclerotics, are developed."

Duggan[11] and Nanavati's patient was a boy whose father was normal, but the mother and two sisters were affected. The mother's brother and two sisters were affected. The brother who was not affected had three sons who were not affected. Of the two sisters who were affected, each had two girls and two boys, all of whom were affected. The maternal grandmother was affected—she was undoubtedly the starting point. Their contention is that the condition of blue sclerotics is transmitted through affected females and in this instance was dying out in the only male affected, or in other words, the uncle, being only slightly affected, did not transmit to his sons. The greatest depth of color in their cases was about 1mm. from the limbus of four patients examined—the mother, son, and two daughters. The iris was brown in each instance. All of the examined had normal fundi and vision except the boy. His fundi were normal, but he had myopia of a moderate degree. They also report a case of a Multani girl of blonde type who not only had blue sclerotics, but had a blue discoloration of the skin of the lower part of her face on the right side. There were no pathological changes in the skin. She had an adherent leucoma of right eye. There were no other members of family affected. She was born with this condition of the skin. They did not find any evidence of fragilitas ossium, deafness, or congenital syphilis in the girl.

Colonna[12] reports nine cases of osteogenesis imperfecta, their ages ranging from three days to twenty-five years. The younger the patient the lighter blue in color is the sclera, while the older the patient the darker blue prevails. "The etiology of osteogenesis imperfecta is unknown. In some of the cases reported there is a familial tendency * * * Endocrine disturbance have been thought to be

a cause, but no definite data can be advanced to substantiate this, although several writers are impressed with the possible role of the parathyroid as a causative factor. Severe trauma occurring late in pregnancy, amniotic bands and intrauterine adhesions have all been mentioned by various writers as predisposing factors, but as yet definite proof is lacking. Syphilis definitely does not seem to be a factor."

Oast" reviews in detail the literature and cites the case of the "Oxford family" as studied by Stobie, which included sixty-six individuals, covering five generations, in which he shows that there is no instance in which a generation has been skipped.

Gleich" says: "Osteogenesis imperfecta appears to be a fetal or embryonal disturbance due to faulty mesoplastic tissue. This tissue, in turn, owes its poor quality to defects in the hereditary units (the chromosomes) of the parents' germ-cell." He reports four cases in one family in which there were no blue sclerotics.

Joachim and Wasch" saw eight cases of fragilitas osseum in one family covering three generations, and have been able to trace the disease in five generations. They report three of these cases, one a female, age 42, with blue sclerotics, who all her life had been subject to sprains of her hands and feet from the slightest cause, and once broke her thigh from tripping. Her daughter, age 9½, had her first fracture at five weeks while being lifted from the bath tub. In all, she had eighteen fractures. The sclerae are blue. A niece of patient No. 1, age 13, had her first fracture at eighteen months of age. She had numerous fractures. She also had blue sclerae.

Ryan" reports two cases of osteogenesis imperfecta which were treated apparently successfully by the administration of thymus gland by mouth. In one case there were blue sclerae, while in the other there was no history of sclerotics in the family.

The father of a family in Oklahoma, about whom I have heard but not seen, writes me as follows: "In regards to my son, his eyes have a bluish cast, vision is good, although he has granulated eyelids. My other children's eyes would be called blue; however, they all look exactly alike. My eyes are blue (I mean the whites). My wife is dead. I don't remember, but think her eyes were white. As to relatives, I cannot tell you much about them, but on his mother's side they have had quite a few broken bones, there being one boy who is worse than my son (this son had had numerous fractures before he was 9 years of age). My oldest son was as bad as this one, but he is dead and don't remember about his eyes."

This boy has been a patient in one of our hospitals on three different occasions because of fractures, with a diagnosis of fragilitas osseum.

A letter from Dr. Chas. F. Clayton, of Ft. Worth, Texas, as follows: "* * * with reference to the case of osteogenesis imperfecta, about which you inquired, this child is now in the hospital recovering from his forty-second fracture. Neither he nor any member of his immediate family have blue sclerae. I am not able to determine whether any relatives farther back had this condition or not, Another cardinal sign of this condition which is absent in this case is wormian bodies in the skull." This is probably a sporadic case without blue sclera,

Henderson" reports a case of fragilitas osseum about whom he wrote me as follows: "We do see blue sclera in fragilitas osseum in varying degrees. In the case of the patient whom I report in the proceedings, I did not give a full history, but he did have a moderate degree of blueness of the sclera."

In April of 1933 I saw a little girl, age 5, who has china blue sclerae. An examination of this child showed her vision normal, fundi and tension normal. The greatest depth of blue was about 1 mm. from the limbus. The iris is gray-blue. There is no history of fractures or sprains. Her brother, age 3, has white sclera and brown iris. The mother does not have blue sclera. The father has blue sclera (a heavier shade than that of the daughter) and gray-blue iris. The father said that before he was twenty years of age he had "fractured every bone in his arms and legs," but had had no fractures since that time. There are no deformities of either limb. He gave as an explanation of the fractures that his mother said it was caused by giving him so much quinine in infancy for malaria. There is no history of blue sclerotics insofar as I can determine from an examination of the father.

TREATMENT

There is no line of treatment which can be said to have any great influence on fragile bones. Everything has been tried with little or no success. Thymus gland,

parathyroid, x-ray, diet, calcium gluconate, calcium lactate, different rays, and many, many other drugs, but with no lasting benefit.

Since the bones may and do fracture with the least possible violence, babies break their leg or arm turning in their crib, or children may break a femur from lightly bumping into a chair, preventative treatment has done more than anything else to care for these patients. It is essential that early in life they be taught how to care for themselves and thus prevent so many fractures.

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TREATMENT IN POST-OPERATIVE ILEUS*

GEORGE H. NIEMANN, M.D.
PONCA CITY

My purpose in selecting this subject is to present to you some of the newer methods of treating the post-operative complications of abdominal surgery and particularly intestinal surgery. We need no longer have fear in our hearts for post-operative ileus. Our patients can be relieved to a large extent of the dreaded post-operative gas pains. In general peritonitis, we need no longer have a mortality of eighty to ninety per cent. This can be reduced by at least one-half.

Recently Rosser stated that 4,000 people in Germany died yearly from post-operative ileus. Sir Frederick Trevis wrote late in the last century that 2,000 people died in England every year from this cause. It is reasonable to assume that no less than 5,000 deaths occur annually in the United States from this complication.

There are several factors in the cause of post-operative ileus: First, in elective cases where no attention has been paid to the preoperative care. A little attention at this very important time will greatly reduce the percentage of this complication. Limiting the diet of the patient before operation to carbohydrates with low protein intake will aid markedly; this is especially true of gall bladder surgery where high glycogen reserve is required in the liver. Second is the anesthetic. In this regard it is well to bear in mind that inhalation anesthesia causes a toxic effect on the general system. In selecting an anesthetic it is necessary for the surgeon, after studying the case, to use his better judgment. A great aid in the operative technic for the prevention of ileus has been developed in recent years by the use of spinal anesthesia. The relaxation from this renders the operative procedure less difficult and minimizes the shock. The safety of spinal anesthesia as compared with general anesthesia is also highly desirable; as time has progressed, mortality

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has been reduced to the minimum. It has been truthfully said that spinal anesthesia makes a skillful surgeon out of a clumsy one. Less trauma is produced; it takes the place of one or more assistants. The pathology in the abdomen can be more readily located and removed; you can get in quickly and out quicker, and this, of course, is to the best interest of the patient. The third cause of ileus is what the surgeon does after he opens the abdominal cavity, the length of the operation, the amount of trauma the intestines have to undergo, and the exposure to which the viscera have been subjected. Fourth, infection is no doubt a common cause and, in my opinion, perhaps the most frequent cause of post-operative ileus.

The usually accepted treatment, until recently, consisted of enemas, rectal tubes, gastric lavage, heat to the abdomen and occasionally pituitrin. We treated the symptoms; we disregarded the physiological changes which take place in the fluids and tissues of the body as a result of the obstruction. No wonder our mortality, according to Deaver, Ross, Kirschner, and others, remained at the high point of twenty-five to fifty per cent.

Most of the articles in our surgical journals deal with the modification of older methods or with new surgical procedures. Patients should be given more time and study and pre-operative preparation. If we followed a planned physiologic and biologic preparation a surgical procedure with a high mortality could often be changed to one of comparative safety. Progress in general surgery will be made only when the surgeon realizes and appreciates the importance of the chemical changes which take place in the body as a result of damage from surgical intervention and anesthesia. There will be an increasing interest in the cause and prevention of post-operative complications, especially the chemical changes which take place in the blood. It will be more fully understood that traumatized tissues repair more readily when kept at rest. Greater attention will be paid to pain and nervousness and the importance of maintaining the acid-base balance in the prevention and treatment of disease. Progress in this direction has been so rapid that a new field may be said to have opened to the clinician based on a greater knowledge of the chemistry of the body.

In health the reaction of the blood and tissues of the body are preserved at a very constant level. Wide variations from the normal are incompatible with life. Any condition which disturbs the natural physiological processes of the body will disturb this physiochemical reaction and produce an acid-base imbalance, that is, produces either a pathological alkalemia or an acidemia. The reaction of any fluid depends upon the relative number of hydrogen and hydroxyl ions. If there is an excess of hydrogen ions, the solution is acid, and if the hydroxyl ions are in excess, the solution is alkaline. When we use the term acidosis, we mean there is an excess of the hydrogen or acid ions; in alkalosis, the excess is in the hydroxyl or OH ions.

Recent work of Dr. Thomas G. Orr and his associates has thrown a great light toward an intelligent understanding of the changes which take place in intestinal obstruction, not alone in the bowel but throughout the entire body, particularly in the blood. Regardless of the original cause of the ileus, whether some sort of trauma to the bowel or a low grade infection, an adynamic condition exists with loss of muscle tone and absence of peristalsis and the bowel in turn becomes distended. Even now, the fact that ileus is not the cause of death, is not fully appreciated. We believe, as do others following the work of Orr, that death is due to a disturbed chemistry. With the development of ileus certain changes take place within the body. The first and perhaps the most important is the rapid dehydration. It is necessary to realize that in the normal intestinal tract there is a continuous process of excretion and a reabsorption of fluids. Rountree has tabulated the quantity of secretions entering the intestinal tract in twenty-four hours to be from 7,500 to 10,00 cc. This is two or three times the quantity ingested by mouth and three to four times the quantity secreted as urine and about twice the total volume of blood. It can readily be seen that any lesion of the intestinal tract which prevents reabsorption of such a large quantity of fluids and elements will result in a serious loss of the essential constituents of the body.

Probably the next most important change is the loss of chlorides in the body. This has been recently proved, as you know, by the extensive study of blood chemistry in these cases. Hartwell and Hauget, in 1912, first noted that the lives of animals with intestinal obstruction could be prolonged by giving salt solution; they gave credit to the water and overlooked the importance of the salt. Sodium

chloride is essential in maintaining the acid-base balance, in the water distribution, in the formation of HC1 in the gastric secretions and in maintaining muscular tone; also, according to Fleming, the bactericidal power of the blood is influenced by the salt content. Life began in the sea; the first and most essential elements were water and salt; life cannot exist without a proper balance of these elements. With the two previously mentioned systemic changes in the physiology of the blood may be mentioned an increase in the non-protein nitrogen. The appreciation of these facts indicates a specific therapy which, when applied, will be a great aid to us in the treatment of post-operative ileus.

There is no therapy so logical as that which has to do with the substitution in the body of elements that are lost by and during the course of a disease. In the treatment of intestinal obstruction the restoration and maintenance of the water and salt balance is fundamental. Orr has shown that glucose solution or distilled water has no effect on the progress of intestinal obstruction so far as the restoration of water and chemical balance is concerned. This is also true in post-operative ileus. It is reasonable to believe that a normal balance of water and salt should be maintained. In ileus there is a great loss of fluid from the body by vomiting. The fluid is secreted in the intestinal tract and is regurgitated into the stomach. Due to the condition of the intestine, no reabsorption takes place and the stomach becomes distended with fluids which have a high chloride content. Vomiting occurs with loss from the body of these two essential elements. The physiological changes which accompany the over-distention of the stomach and the small intestine are the chief dangers in paralytic ileus. Sodium chloride, when given as a hypertonic solution, in addition to replacing water and salt, stimulates peristalsis and will aid in the return of normal tone to the bowel.

Another very important aid which we have at our command is the intelligent use of morphine. Many believe that morphine slows peristalsis; probably the basis of this is the fact that in dysentery paregoric is the one drug par excellent. However, in this case, the opiate is given per orum. Morphine given hypodermically does not have this effect; rather, it stimulates peristalsis. The action of the same drugs given per orum or given hypodermically may vary greatly. Probably one of the best examples of this would be the oral administration of magnesium sulphate; in this we have a dehydrating effect. However, when this drug is given intravenously, we have an entirely different effect; the action is mainly on the central nervous system, antispasmodic, and lowers the blood pressure. Many other examples to illustrate this point might also be given. The patient with ileus is nervous, restless, and anxious, and morphine is the one drug to relieve these symptoms.

Another very important aid for the relief of distention is the use of the indwelling Rehfuss tube, or duodenal tube. Matas, in 1924, made the observation that "by draining the stomach the gastric tube acts in reality as an artificial anus which empties the upper intestine." Drainage of the stomach and duodenum is now recognized as an essential part of the treatment of abdominal distention. Whether a Rehfuss tube or Levine tube is used, is immaterial, but in either case it should be passed into the stomach and left in place as long as needed. The stomach should be aspirated frequently. The patient may be permitted to drink water ad libitum. Constant siphonage prevents over-distention of the stomach.

Ileostomy as an additional procedure in relieving ileus has little to offer. In a large series of cases of intestinal obstruction of various groups at Mt. Siani Hospital, New York, enterostomy was done in forty-one cases of acute mechanical ileus and twenty-one cases of paralytic ileus. The mortality following enterostomy in the dynamic group was 70 per cent and in the adynamic group 80 per cent. This is a fearful mortality.

I have established in my practice, where paralytic ileus is present or where I suspect an ileus may develop, the following regime: Enough morphine to keep the patient quiet and free from pain. I give, within twelve hours after operation, salt solution. It is of utmost importance to give intravenous solutions very slowly to avoid speed shock. Reactions rarely occur when intravenous therapy is given slowly. For practical purposes, I require at least one hour to give 1000 cc. of hypertonic salt solution; 500 cc. of 5 per cent in one to one and one-half hours; and 200 cc. of ten per cent solution in one hour. I find that the average case requires 3000 cc. of hypertonic solution every 24 hours. If too much sodium chloride is given, edema may

appear, first in the ankles, later a general anasarca may occur. It is better to give too much salt than not enough. Where the dehydration is not marked and when dealing with a paralysis of the bowel, less water can be given, but the percentage of salt should be increased to 10 per cent. The advantage of this is to increase the tone of the bowel and also to overcome hypochloremia. For post-operative gas pains 50 cc. of 10 per cent solution given with a large syringe will give immediate relief.

The question often arises when to give salt solutions and how much salt to give. Those of us who are privileged to have a laboratory at hand where blood analyses may be made, should have this done frequently. The blood chlorides should be kept well within the normal limits. If the blood chlorides are up to normal, then normal salt solutions can be given. If the chloride content of the blood is low, then the stronger solutions are indicated.

SUMMARY

1. Patients do not die from ileus or as a result of absorption of toxins, but they die as a result of the chemical changes which take place in the blood and tissues after ileus develops.

2. Recovery depends upon a careful estimate and correction of the water loss and chemical imbalance.

3. Glucose solution or distilled water have no effect upon the progress of intestinal obstruction as far as restoration of water and chemical is concerned. Sodium chloride is a necessity in the maintenance of chemical balance.

4. Control of water, chemical, and metabolic balance, prevention of over-distention by the decompression tube, conserving the patient's strength with morphine, and stimulation of bowel tone are the essential factors used in maintaining the patient's resistance while he is overcoming the disease.

DISCUSSION

Dr. Kuhn: I consider this a very important paper. It seems to me that somebody should have something important to add to this paper.

Dr. A. C. Hirshfield, Oklahoma City: I think this paper is of the utmost importance. A great deal can be said, but there is not much to be added to Dr. Niemann's very thorough discussion of the subject. Two thoughts occurred to me about the prevention and treatment of ileus. I believe that surgeons who operate against the clock have more ileus than those who do not. In other words, the man who tries to make time merely for record has more ileus than the man who takes more time and works more gently. In other words, careful and gentle handling of the intestines is of more importance to the patient than five or ten or fifteen more minutes of operative time. I do not mean to take half a day for the operation, of course, but I do believe that hurrying is responsible for a good deal of ileus. So much for that. Our use of salt solution post-operatively, I think, has gone a long way towards the elimination of post-operative ileus. We use it routinely almost altogetner, in mild cases under the skin, in severe cases intravenously, and in practically all cases by rectum as long as it can be used without discomfort to the patient. In more than average distention, I believe that adequate drainage of the stomach and duodenum by use of the nasal duodenal tube will go a long way toward reducing post-operative ileus. In fact, since we have used this method we have not had to do any post-operative enterostomies.

Dr. Kuhn: I was hoping that someone would describe in addition to the drainage tube, the suction method by hypostatic pressure from the bottle which is a little refinement in continuous drainage.

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SHOULD COD LIVER OIL BE FLAVORED?

It is a well-known fact that young infants shy at aromatics. Older patients often tire of flavored medications to the point where the flavoring itself becomes repellant. This is particularly true if the flavoring is of a volatile nature or "repeats" hours after being ingested. Physicians have frequently used the term "fresh," "natural," "sweet," and "nutlike" in commenting upon the fine flavor of Mead's Cod Liver Oil. They find that most patients prefer an unflavored oil when it is as pure as Mead's.

Physicians who look with disfavor upon self-medication by laymen are interested to know that Mead's is one Cod Liver Oil that is not advertised to the public and that carries no dosage directions on carton, bottle or circular. Mead Johnson & Company, Evansville, Indiana, U. S. A., Pioneers in Vitamin Research, will be glad to send samples and literature to physicians only.

REPORT OF PERSIMMON BEZOARS OCCURRING AROUND TULSA, OKLAHOMA*

H. D. MURDOCK, M.D.
TULSA

The word, bezoar, is derived from the Persian compound padiseher, corrupted into bedzohr, and bezoar. It means antidote, or expeller of poisons. It is applied to masses found in the intestines and stomachs of men, animals, birds and whales. They were known in the 12th century B. C., and were officially described and admitted to the first London Pharmacopoea.

Bezoars were worn as amulets by the superstitious, who have sometimes purchased a single one from the East for six thousand livres (twelve hundred dollars) when very fine, and rented them in Holland and Portugal occasionally at a ducat a day. From the supposed value of bezoars in medicine, they were at one time imitated and the false ones sold as genuine. These suppositious stones were compounded of lobsters' claws and oyster shells, and formed into balls of the shape of bezoars. The stones found in the stomachs of roosters were also given publicity as desirable amulets, as they assured the possessor health, strength, wealth and bravery.

Oliver Wendell Holmes, in his Medical Essays, states: "Governor John Winthrop, the first, sends for East-Indian bezoar. Governor Endicott sends him one he had of Mr. Hunfrey. I hope it is genuine, for they cheated infamously in the matter of these concretions."

In the inventory of Queen Elizabeth's crown jewels, made at the ascension of James I, there is this item:

"Also one great Bezar stone, set in goulde that was Queen Elizabeth's, with some Unicorne's Horn, in a paper; and one other large bezoar stone, broken in pieces, delivered to our owne hands, by Lord Brooke the two and twentieth day of Januarie, one thousand six hundred and twenty two."

Queen Elizabeth, like most people of her time, made no secret of her superstitions, for they were the accepted beliefs. To ward off disease she wore suspended from her neck a piece of gold engraved with mystical characters and her bezoar stones were her infallible antidotes against all poisons. It was a very useful medicament in those bygone days when the art of poisoning was highly developed. In cases of suspected poisoning the bezoar was swallowed and recovery was assured. If the bezoar failed, the explanation was simple—the patient died of something else.

In human beings we find bezoars composed of hair balls, concretions and vegetable material. Among the concretions we have, shellac, bismuth, and salol. Masses of each of these concretions have been found in the intestinal tract. Shellac bezoars are found in the stomachs of painters who have been drinking alcoholic solutions as a stimulating beverage. Bismuth has been found following its use for roentgenographic study. One mass, weighing 40 grams, of pure bismuth was found in the stomach. A mass of crystalized salol, 5 centimeters by 3 centimeters, was found in the stomach of a Turk. In the case of Margaret Lauer, reported in Good Study of Medicine in Boston, 1823, stones were formed in great abundance in the intestines; upon pressing on the abdomen there was a rattling like the sound of a bag of marbles. In a horse that had been fed largely on bran, a bezoar was found, weighing 15 pounds, 2 ounces, and 8 inches in diameter.

A gray, wax-like substance called ambergris is found in the large intestines of diseased sperm whales. Some of these masses are discharged from the intestines and found floating on the water. Ambergris is usually loaded with hard, bony fragments of the beaks of cuttle fish, on which whales are known to feed. The largest single piece of ambergris known to whaling annals was found in the interior of a whale by Captain James Earle, of New Bedford, Mass. It weighed 780 pounds, and was sold in chunks in various markets of the world for $100,000. Ambergris now is worth about $80.00 an

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ounce. A large quantity was found on the California coast this past winter. Ambergris has been used for centuries in the sacerdotal rites of the church, and with fragrant gums was frequently burned in the apartments of royalty. To some extent it was employed as a medicine and also as a flavoring extract. Nowadays it is utilized almost exclusively by perfumers in the preparation of fine scents.

Some madstones are undoubtedly bezoars. Madstones are vegetable substances or stones which when applied to a wound caused by the bite of a mad dog are said to prevent hydrophobia. Sir Walter Scott, in "The Talisman," mentions one which has been religiously preserved as one of the most valuable relics of the age. The Pall Mall Gazette, of London, in January, 1874, described a madstone in this fashion: "Eleven hundred applications of the stone have been made to mad-dog and snake wounds, without a single failure to cure."

Bezoars are composed of vegetable materials; the stems, skins, fibers, seeds and other debris may be included. Quain, in 1854, reports the first recorded case of phytobezoar, a mass composed of string and cocoanut fiber.

Three men, during the late war, ate a diet of greens, couch grass, parsley, mallow roots and wild beets; there formed in the stomach of each of these men a bezoar which was removed. Pumpkins, raisins, prunes, celery, persimmons and bran are the common cause of bezoars.

Persimmons are the only cause of bezoars I am able to report around Tulsa. Fresh ripe persimmons lend themselves to form bezoars, their pulp containing 14% gums and pectin. A quantity of fresh persimmons is probably pressed in a mass immediately after entering the stomach, and this is soon compressed in a solid mass, remaining in the stomach until it either breaks up or is removed surgically. There ought to be many cases annually of intestinal disturbances caused by a mass of persimmons.

The persimmon belt extends south from Massachusetts, New York, Northern Ohio, Indiana, Illinois, and Kansas. Kansas, Oklahoma and Texas are the western limits of the trees.

Dr. Balfour, Rochester, Minn., in the American Journal of Surgery, May, 1929, Dr. W. E. Hart, Decatur, Ill., in the Journal of American Medical Associatian, June, 1923, Good's Study of Medicine, Boston, 1823, all have articles on bezoars. There are also many other reports.

Case No. 1: A man 40 years old, in November, 1929, about 11 o'clock at night while out coon hunting ate a large quantity of persimmons. The next day he vomited occasionally and following this he had abdominal pain for two weeks. His stomach never was normal after eating the persimmons and he complained of a "drawing" sensation in the stomach. For the past three weeks he had many cramplike pains in the upper abdomen, slight relief was experienced when he ate. He could feel a hard movable mass in the region of the stomach. He had gained five pounds in weight in the last year. I saw him first October 20, 1930, eleven months after he had eaten the persimmons. This man had a firm, non-sensitive, smooth, mobile mass about 5 inches long that could be easily felt in the region of the stomach. I had him x-rayed by Dr. M. B. Lhevine and the following is his report:

"The food passes through the esophagus freely. The stomach is large. There is visualized a large mass, situated freely within the stomach cavity. The mass is not attached to the stomach wall. Upon ingestation of a small amount of barium. the barium spreads over the mass as 'glazing over a cake,' presenting further evidence of the mass being free in the stomach. The stomach wall is movable and pliable with no evidence of any infiltration. Upon further ingestion of the barium, it passes along the lesser curvature into the duodenum with no evidence of any pylorospasm. The plyorus opens immediately into a normal duodenal cap. The x-ray film reveals a finger print deformity in the central portion of the stomach, between two and a half and three inches in length. The mass persists in the stomach in the subsequent two and a half hour examination. The mass is irregular in shape, occupying the entire stomach space. The seven and the twenty-four hour examination reveals nothing abnormal, with the exception of a spasticity of the colon.

"Resume: Because of the mass lying free in the stomach, with no evidence of any involvement of the stomach wall, and because of the definite history given by the patient, of eating persimmons some months ago, we come to the conclusion that this patient suffers from a persimmon ball, otherwise known as a phytobezoar."

On November 18, 1930 (one year after

the original ingestion of persimmons), during the meeting of the Oklahoma State Medical Association in Tulsa, I removed a firm, black, banana-shaped bezoar composed of persimmon seeds and skins, from the stomach, which measured 22 centimeters long along its greater curvature and 14½ centimeters in circumference, weighing one pound. The patient had an uneventful recovery.

Case No. 2: Dr. J. B. Lampton and Dr. W. P. Longmire report that in the latter part of October, 1922, one Sunday afternoon, a boy four years old ate persimmons and swallowed the seeds. That night he suffered much upper abdominal pain and began to vomit. Two lumps were located in the upper abdomen, apparently in the stomach. The vomiting increased and the family called in a chiropractor who failed to relieve the patient. On Tuesday a gastrotomy was done; in the stomach were two masses of persimmon seeds and skins; one mass two inches in diameter, cone-shaped and tightly wedged in the pylorus; a second oval mass three inches in diameter was present. The patient made an uneventful recovery and left the hospital on the tenth day. The previous diagnosis was intestinal obstruction.

Case No. 3: Dr. J. C. Lowe reports that in the spring of 1920 a boy ten years old was brought into the hospital. He complained of vomiting and epigastric pain; he had lost much weight. An x-ray was taken and a diagnosis was made of sarcoma of the stomach. The stomach showed a filling defect and a mass could be easily felt. He was transfused twice, and at the operation a mass of persimmon seeds and skins measuring three inches long and one and a half inches in diameter was removed. The patient made an uneventful recovery.

Case No. 4: Dr. R. V. Smith reports that late in the fall of 1902 he treated a boy eight years old who was very ill, had abdominal distention, and a palpable, sensitive mass was in the lower left abdomen, which resembled an appendiceal abscess; this proved to be an abscess; it was drained, and in it were many persimmon seeds and skins. This had evidently been a persimmon ball which had disintegrated. The patient recovered.

Case No. 5: Dr. Ross Grosshart reports that in the spring of 1913 he saw a man 22 years old, who had a palpable mass in his stomach. He complained of indigestion. He was x-rayed and a foreign body was diagnosed in the stomach. At the operation a mass of persimmon seeds and skins was removed. The mass was oval, three inches long and two inches wide. The patient had an uneventful recovery.

Case No. 6: Dr. A. V. Emerson reports that in May, 1922, he saw a woman 55 years old who complained of "colicky" abdominal pain for the past six months. She was taken acutely ill with severe abdominal pain while riding on a wagon. She consulted a doctor who gave her a physic; the next day another doctor gave her much physic, including croton oil, with no results; on the third day she was sent to the hospital with a diagnosis of intestinal obstruction. At the operation there was found a smooth, hard, oval mass one and a half inches in diameter, eight inches above the ileocecal valve, containing persimmon seeds and skins, which was removed. The patient died the next day, as the result of intestinal obstruction and too much physic.

Case No. 7: Dr. M. A. Houser reports that in 1920 he saw a man 40 years old who had been ill four months. He had eaten a large quantity of persimmons while out hunting. Shortly afterwards he had nausea and epigastric pain. A preoperative diagnosis of carcinoma of the stomach was made; a palpable tumor could be felt in the stomach; no x-ray was taken. At the operation a mass five inches long and two and a half inches in diameter, of persimmon seeds and skins was removed. The patient recovered uneventfully.

Case No. 8: Dr. A. W. Pigford reports that in October, 1929, he saw a woman 61 years old, who, on October the 24th had eaten about twenty-four persimmons and that night she began to have a dull epigastric pain accompanied with nausea and salivation. Two days later she consulted Dr. Pigford. She had a four-inch palpable mass in the region of the stomach which apparently extended towards the left hypochondrium. She improved, but on October 30th she became worse and was sent to the hospital. Her stomach was x-rayed by Dr. Leon Stewart who reported the presence of a freely movable mass in the stomach, which he believed was a phytobezoar. On November 4th an oval, green, firm mass three inches in diameter was removed from the stomach, which contained the remains of persimmons. The patient had an uneventful recovery.

Case No. 9: Dr. D. L. Garrett reports

that in 1928 he saw a man 42 years old who complained of epigastric discomfort, worse one hour after eating. He felt as though there was a lump in his stomach, and that something seemed to block the passage of food. The patient stated that he had eaten freely of persimmons while hunting. An x-ray revealed a freely movable mass in the stomach. A diagnosis of phytobezoar was made. At operation a black, cylindrical mass nine and a half centimeters by four and two-tenths centimeters, weighing 68 grams, was removed. Patient had an uneventful recovery. This case was reported in the Oklahoma Medical Journal in 1928.

Case No. 10: Dr. A. D. Davis reports that in November, 1907, he saw a man who had been horseback riding for several hours, and during that time had eaten some fresh persimmons. Shortly after this he complained of epigastric pain with nausea; a mass could be easily felt in the region of the stomach. His stomach was washed out several times; at one of these times fragments of persimmons came out. The patient became emaciated and on January 2, 1908, a gastrotomy was done and a mass of persimmon seeds and skins two and a half inches in diameter and five inches long was removed from the stomach. This case was reported at the Frisco Railway meeting at that time. The pre-operative diagnosis was mass of persimmons in the stomach. This diagnosis was, of course, made after the washing out of the persimmon seeds at one time. The patient made an uneventful recovery.

Case No. 11: Dr. Ralph A. McGill reports that in December, 1929, he saw a man 55 years old who had gone hunting in November, 1929, and had eaten a large quantity of persimmons. That night he had nausea and epigastric pain and took a physic. He was sent to the hospital in December, complaining of a fullness in his stomach, and he could only eat a small quantity of food; a mass could be easily palpated in the region of the stomach, which felt about five inches in diameter; he was x-rayed at the Morningside Hospital and a movable mass was easily demonstrated in the stomach. A diagnosis was made of phytobezoars. At the operation a mass of dried persimmon seeds and skins, five inches long and two and a half inches in diameter, was removed. Patient had an uneventful recovery.

Case No. 12: Dr. Ralph A. McGill reports that in March, 1930, he saw a man 45 years old who was a painter. He complained of much abdominal pain, constipation, nausea and vomiting; had all the indications of intestinal obstruction. A diagnosis of this was made. On March 19th, eight inches above the ileocecal valve, a moderately firm mass, one and a half inches in diameter, was broken up, which immediately relieved the obstruction. In the stomach was a two-inch, oval mass of persimmon seeds and skins, which was removed. Patient recovered.

Case No. 13: Dr. Fred Woodson, formerly at the State University Hospital, states that on January 16, 1932, a farmer 28 years old entered the hospital complaining of pain in the abdomen, with constipation and vomiting. Forty-five days before he had eaten a large number of persimmons; the next day he had a burning pain in the epigastrium followed by pain in the lower abdomen, and later by general abdominal pain. He was not confined to bed, but was never well and only worked part of the time. He had been having attacks of pain beginning in the right upper quadrant, radiating into the chest and down both sides. He had lost forty pounds in weight. On January 14th he had severe cramping abdominal pain requiring morphine and chloroform for its relief. He soon began vomiting material which later became fecal in character. He entered the hospital two days later; patient was desperately ill; had continuous nausea, and at frequent intervals vomited large quantities of material with fecal odor. The abdomen was markedly distended and he was extremely sensitive over the entire abdomen, with muscular rigidity. R.B.C. 5,000,000, W.B.C. 7,750, Poly's 92%. At operation on January 17, 1932, a perforated ulcer in the lesser curvature of the stomach was found, through which much fluid was draining. The ulcer was cauterized and sutured; patient was drained. He did not do well and died on February 2, 1932. A necropsy revealed a perforation of the previously repaired gastric ulcer with general peritonitis. In the stomach was a freely movable, black, slightly crescent-shaped mass, four and a half inches long and two inches in diameter, which was composed of persimmon seeds and skins. This was not noticed during the operation on account of confining the surgery to repair of the perforation. A diagnosis of persimmon ball accompanied by some acute lesion in the abdomen, had been made before the operation.

Case No. 14: Dr. James Gilbert saw a man who had eaten persimmons in the fall

and complained of discomfort in the upper abdomen. He was x-rayed and diagnosis made of a persimmon ball. He was operated in February and a four-inch mass of the remains of persimmons was removed from the stomach. He recovered.

Case No. 15: Dr. James Gilbert reports a second case in a man who came into the hospital with a diagnosis of intestinal obstruction. Upon operation a small bezoar was found eight inches above the ileocecal valve. This was crushed by hand, and relieved the obstruction. From the stomach was removed a second persimmon ball three inches in diameter. The man recovered.

Case No. 16: Dr. W. T. Trainor reports that in May, 1933, he saw a man 70 years of age who had taken sick with severe diarrhea, accompanied with abdominal pain, nausea and some distention. He was sent into the hospital and a one and one-half-inch mass of the remains of persimmons was found just above the ileocecal valve causing an obstruction. The man did not recover.

DISCUSSION: *Dr. LeRoy Long,* Oklahoma City:

This is an interesting composition by Dr. Murdock, and calls attention to the disturbances that take place in the gastro-intestinal tract due to foreign bodies. I think I shall limit my brief remarks to foreign bodies in the intestines, although the majority of these cases reported, I believe, were foreign bodies in the stomach. I have not seen any of these cases in my own work that I could blame on persimmons. I saw one case in the operating room of Dr. Carson of Shawnee about eighteen months ago—a young man. I saw him when he operated. A mass was removed from the ileum which produced complete obstruction, and Dr. Carson told me afterwards that investigation showed it was due to persimmons, and he got a history of the patient having eaten persimmons.

I had a peculiar case of foreign body in the gastro-intestinal tract in which the patient, a young woman, had eaten honey with the comb and green corn. That was a peculiar mixture but she liked it. When I saw her she showed evidence of a complete intestinal obstruction. A mass made up of honey and green corn had accumulated in the ileum and produced complete intestinal obstruction.

I had another case, an elderly woman, who gave a history that indicated incomplete obstruction from the symptoms. Finally the symptoms became more pronounced and when she was brought to the hospital she had a complete obstruction. When she was operated a mass was found made up of homogeneous material, probably an accumulation of fecal material, that was in the ileum and had blocked it completely. There was complete occlusion of the ileum and of course complete obstruction.

I think this paper is important because one must keep in mind with symptoms indicating an intestinal obstruction, that it is possible to have such an obstruction produced by a foreign body of some kind.

Just one more remark in connection with peculiar cases: I saw a man who was dying of intestinal obstruction. The autopsy showed an obstruction of the large bowel. He had been in the habit of taking bran to get bowel movements. There was a carcinoma of the large bowel, and above that a plug of bran had accumulated, which produced a complete obstruction.

Dr. J. A. Walker, Shawnee: This especial problem is entirely new to me, but some years ago I had a condition similar to this in a boy. I was called down in the south end of the county one night, and I went out and found this boy about eleven o'clock at night in his home. The abdomen was distended, and he gave a history that he was out in a pasture and fell into a ditch about ten feet deep, and he got out and came home and finished doing up the chores, and then got sick. His father gave him a couple of C.C. pills and salts, etc., and he promptly threw all that up. They called me and I took Dr. Baxter with me and we landed at the home about eleven o'clock at night, and there was this desperately sick boy. They didn't have any light to speak of, but the doctor happened to have an acetylene light and when we lighted the doctor's light all the flies within three hundred miles came into the house. We didn't have anything along to smear on the boy's belly, but we found hanging on the wall about an ounce of tincture of iodine and we smeared that on the boy's abdomen and anesthetized him after telling the father that there was nothing to do except operate, and we didn't want to do that. We laid him up on the kitchen table and went ahead. Dr. Baxter said: "Here is our kink," and over on the right side there was an enlargement

and completely obstructed bowel. We picked it up, and there was the intestine perfectly occluded, about twelve or fifteen inches above the ileocecal valve. We got that open and there was a rock about as big as a golf ball, or maybe a little larger. About eight inches above this there was another obstruction, and we slipped that down to the same hole and dropped it out. The boy got well and seems to be well yet.

Dr. Kuhn: He must have absorbed those rocks when he fell in the ditch.

Dr. Walker: I think that fecaliths maybe had accumulated in the stomach and by this jar they might have gotten away and started down the intestinal tract and caused obstruction.

Dr. J. G. Breco, Ada: A number of years ago I had a cowboy who had eaten a bait of persimmons. He made the rounds of about four doctors. They each gave him a round of calomel, and it was eight days from the time he ate the persimmons until his bowels acted. He came to me, gave me the history, and I decided it was a rectal strangulation. I got him on the table and used cocaine and then used my fingers. I worked out at least a quart of persimmons and persimmon seeds from the rectum. He had complete closure, and it was eight days after he had eaten the persimmons.

THE PRACTITIONER OF THE FUTURE

James B. Herrick, Chicago (Journal A. M. A., September 22, 1934), points out that whether a physician is to be successful depends in a measure on his native endowment and to some extent on chance. The possessor of knowledge, even though it is accurate and encyclopedic, is not necessarily a good practitioner. The reason may go back to the man's choice of a vocation. Some men are not medically minded. There are those who think that success as a practitioner will come only if much time is devoted in undergraduate and later years to research. Medical research and practice differ in qualifications of workers, in objectives and in methods. The aim of research is to advance knowledge by discovery of the new. Practice is the application of knowledge already known. Every question of diagnosis is for the clinician a research problem. Unless the physician is inspired by the activating curiosity to know, to find out by close observation, by comparison with his own experience and that of others, by use of laboratory aids or by experiment, he is an inefficient practitioner, non-progressive and doomed to failure. Too implicit reliance on laboratory examinations may cause sound clinical judgment to shrivel up from disuse. Besides, unless there is extreme watchfulness, the laboratory may develop the impersonal in the doctor at the expense of the personal. The true physician must possess a dual personality, the scientific toward disease, the human and humane toward the patient. The physician learns by study, he becomes proficient by experience. He profits by his own mistakes and those of others. The patient is the most valuable textbook for the undergraduate student and the graduate doctor. The lower schools, universities and professional schools are seriously concerned with what is the best preparatory course for the doctor. How may fewer but better doctors be trained? If good and efficient service is rendered by the ordinary practitioner as an individual or as a member of a group there will be fewer quacks, fewer cults, fewer semi-charitable organizations supported, or even run, by philanthropically minded laymen or recalcitrant physicians. The graduate of today, while he may know relatively less than the doctor of fifty years ago is, absolutely, far better informed than his predecessor. The practitioner realizes that he must know still more. He is eager to learn. The hard work in the local society in order to be most effective should be done by members and not so much by invited guests. The status of the practitioner will be determined largely by what he himself does rather than by what is done for him by others. What he gets out of practice will be in proportion to what he put in. A result of this personal effort on the part of the doctor will be that he will become more self confident, will lose some of his inferiority complex. His patients will sense this and go to him as of old for advice or for treatment. He will dare of himself to test a knee jerk, to assess at its real value a heart murmur, even to tell whether tonsils should come out or stay. He may possibly be so thorough as to make a rectal examination and courageous enough to pass judgment on the results, thus depriving the consultant of one of his cherished prerogatives and most fruitful sources of income. Specialism and research are necessities and have come to stay. And so has the practitioner; but only when, as, and if, he is qualified. There will surely develop in the future a competent practitioner, who, with integrity of character, with ideals of medicine as a profession and not a trade, with mind well stored with knowledge, with skill to apply this knowledge in a large proportion of cases of disease, with consciousness of his limitations, with readiness and ability to advise when and where expert help may be obtained, with good judgment and keen powers of observation sharpened by experience at the bedside and at the necropsy table, is worthy to be the family doctor or adviser, with all the traditional privileges and rewards that come from the personal relation of the old time doctor with the family—esteem and high standing in the community, the confidence and affection of his patient.

IMMUNIZATION OF SCHOOL CHILDREN AGAINST WHOOPING COUGH

J. M. Frawley, Fresno, Calif. (Journal A. M. A., Sept. 29, 1934), has given prophylactic injections of 8 cc. of active undenatured Haemophilus pertussis to a group of 505 nonimmune school children. Injections were followed by practically no local or systemic reaction. Since vaccination, these children have been kept under observation. Forty-nine have been exposed to whooping cough without developing symptoms; sixteen were exposed at home and thirty-three at school. In thirty-one children, whooping cough developed. In twenty-five cases the paroxysmal stage was of less than one week's duration, in five cases of from one to two weeks' duration and in one case of two weeks' duration or more. As controls, 174 nonvaccinated children from the same homes and classrooms who had whooping cough during this period were classified on the same basis as the vaccinated children. The duration of the paroxysmal stage in these cases was as follows: In nine cases it was less than one week, in forty-nine cases from one week to two weeks, and in 116 cases two weeks or more.

President's Page

LEROY LONG, M.D.
Medical Arts Building
OKLAHOMA CITY

TRUTH IN MEDICINE

Legitimate human progress and human understanding depend upon the discovery and recognition of truth. The quest for truth, therefore, commands the attention of all who have a desire to go forward and upward; of all who wish to be the recipients of benefits or who wish to bestow benefits upon others.

The word truth is of Anglo Saxon origin, and in common usage it is equivalent to fact or reality. A counterpart for the word used in that sense is found in the languages of all peoples—not only civilized peoples but peoples who have not reached that somewhat uncertain sophisticated state that we call civilization.

Philosophers speak of logical truth which is equivalent to correct perception and reasoning, and they speak of ontological, metaphysical or transcendental truth, or truth which is external to and independent of the perceiving and judging mind. As practical members of the medical profession, we are interested in logical truth, although I would not minimize the value of an excursion into the mysterious field of metaphysics with its entrancing problems as good exercise for the mind.

The Hindu conception of truth may be summed up in the brief but all-pervading expression: "That which is." From the viewpoint of the average human being, that is a good definition, provided "that which is" comes within the domain of correct perception and reasoning. If it does not come within that domain, then most of us are content to leave the speculations incident to it in the hands of the metaphysician.

Some truths are easily recognized by the special senses of normal individuals, provided the special senses are alert. These may be called simple truths, but they are none the less important because of their simplicity. Strange to say, notwithstanding their simplicity, they are often overlooked through inattention and lack of method and system. For example, the color of the hair or of the eyes can be so easily ascertained that they may be recorded as simple truths, but these are not always remembered. Another example of inattention is the frequent inability of the doctor to recall whether an injury or abnormality is on the right hand or the left hand or on one foot or the other.

Such failure to recognize simple truths would be ludicrous were they not sometimes very serious. I know of a case where a surgeon operated for inguinal hernia on the wrong side, and a laryngologist once told me that he had done a tonsillectomy on the wrong patient.

In medicine, truth is often complex and in order to find it one must find and consider related truths of greater or lesser importance. For example, an individual may have complete inability to extend the leg at the knee. The informed surgeon knows that the lower leg is extended by the quadriceps extensor. He reasons, therefore, that there is paralysis of the anterior crural (or femoral) nerve which supplies the quadriceps extensor, but he would not think of putting that down as the diagnosis without knowing why it is paralyzed. In order to ascertain the truth, he tries to determine whether there has been direct damage of the nerve supply; whether other nerves are involved; whether there are neurological phenomena that would indicate pathology of the spinal cord. In this way, only, can the truth be found—it is found by correct perception and reasoning, and correct perception and reasoning in such a case are impossible without an accurate knowledge of the anatomy and physiology of related structures.

Let us employ another example: A patient has a distended abdomen. That there is distention of the abdomen is a simple truth because it can usually be determined by intelligent inspection. But inspection

alone does not explain why it is distended. The distention may be due to gas in the intestinal tract. If it is, percussion of the abdomen will give a tympanitic note. That is a truth that is not so simple, but it is truth, and the proof of it is through correct perception and reasoning.

But let us suppose that the distended abdomen is flat on percussion. Then, through correct perception and reasoning, we know that the distention is not caused by gas, but by some pathology that gives a flat note on percussion. The next step is to determine what is the intra-abodminal pathology. The abdomen is uniformly enlarged. Uniform enlargement of the abdomen is not common with uncomplicated intra-abdominal tumors, and in this case there is a succussion wave when the abdomen is tapped. That means that there is movable fluid inside the abdomen, and since there is uniform enlargement, the probable truth is that the fluid fills up the peritoneal cavity. I say that this is a probable truth because sometimes enormous ovarian cysts may fill the abdominal cavity. Then, if the patient is a woman, we must try to elicit other truths in connection with the beginning and clinical course.

If, after investigation, it is decided that the enlargement is due to free fluid in the peritoneal cavity, we are able to say that the patient has an ascites. That is an important truth, but it is not the principal truth, because no good doctor would think of making a diagnosis of ascites and stop there. He must take this subordinate truth and make of it a stepping stone while he continues his search for the predominant truth—that is, he must find what is causing the ascites. To that end, he considers cancer, tuberculosis, cirrhosis of the liver, diseases of the kidneys, diseases of the heart, and in his efforts to solve the problem he uncovers truths and endeavors to give to each its proper value.

The ancient philosophers looked at the sun in the daytime. It apparently came up over the eastern edge of the earth, then slowly moved through space and finally went out of sight beyond the western edge of the earth. They concluded that the sun moved and that the earth was stationary, but their conclusions were based upon incorrect perception and reasoning. They thought it was the truth, but it was not the truth.

Copernicus looked at the sun in the daytime, and at night he looked at the moon and the stars and the milky way. But Copernicus did not stop there. He observed the lengthening days as springtime merged into summer, and again the shortening days as summer gave way to autumn. He observed the changed relations of the bodies in the sky. He observed eclipses of the sun and of the moon. He collected data. He reasoned and he reasoned correctly, and through correct perception and reasoning the revolutionary Copernican theory of the movement of the heavenly bodies was born—the truth was found.

Galileo discovered truth one day when he was attracted by the swaying back and forth of a chandelier while kneeling in a cathedral. He not only perceived the swaying of the chandelier, but through correct reasoning he established important truths touching the properties of the pendulum.

Through the exercise of correct perception and reasoning, Galileo discovered many other important truths. Among them was the truth which he had proven to his own satisfaction, that the velocity of falling bodies of the same density is not changed by the size of the body. He made an announcement of this truth while he was professor of mathematics at the University of Pisa, and in order to demonstrate it to his associates on the faculty he carried two cannon balls—one large one and one small one—made of the same material, to the top of the leaning tower of Pisa. They were dropped from the top of the tower at the same instant, and at the same instant they—the big cannon ball and the little cannon ball—struck the ground. That was demonstrable truth, but the disgruntled and fanatical followers of Aristotle went back to their quarters, read the old books, and declared that it could not be because it was not written in the books.

Not many years ago it was believed that malaria was transmitted by a "miasm," but the truth about malaria was ascertained when Laveran found the parasite of malaria in the blood and when Ronald Ross proved that the parasite was carried by the mosquito.

The failure to recognize truth may be due to ignorance, lack of industry, or to egotism.

As indicated above, many of the important truths in medicine, as well as in other fields of human endeavor, can be dis-

covered only through broad and comprehensive knowledge as a basis for perception and reasoning. This is an acute fact in medicine. If the doctor of medicine does not have a broad and substantial knowledge of the fundamentals upon which medicine is based, he is not able to perceive and reason correctly, and will not be able, therefore, to discover truth.

My experience and observation lead me to the conclusion that there is often failure to discover truth because there is lack of industry on the part of the doctor. As a rule, the problems of the doctor can be solved, provided there is a combination of adequate knowledge and industry on his part.

On first sight, the statement that egotism may be responsible for failure to discover the truth may appear to be far-fetched, but I believe that there are many examples which would indicate that the statement is true. The individual who believes that he is absolute master of his profession; the individual who makes diagnoses glibly and without any check being placed upon him by fellow practitioners; the individual who is inordinately proud of his reputation—all such individuals sometimes do foolish and even disastrous things. A striking example is that of the famous Irish surgeon who, in passing through a ward, found a patient with a swelling just below the groin. This surgeon was known as a keen diagnostician, and he was anxious to maintain that reputation. After a hasty inspection and palpation, there was a diagnosis of abscess. The field was quickly prepared, and a scalpel was plunged into the swelling. There was immediate hemorrhage that could not be controlled, and the patient died, because the surgeon had mistaken an aneurysm for an abscess. He was not an ignorant man, but vanity carried him to the point where it destroyed his ability to perceive and reason correctly.

Truth is important to all human beings, and to none is it more important than to those who take the problems of life and death into their hands. It is so important that all of us should subscribe to the statement of Thomas Carlyle in Sartor Resartus: "Truth! though the heavens crush me for following her."

COMFORT AND ACUITY OF VISION SHOULD BE PROVIDED BY GLASSES

The eye physician will insist on the use of glasses only for those patients who most certainly need them, Dr. Hyman Cohen explains in the November Hygeia in the chapter of "The Eye Book" which deals with eyeglasses.

Glasses should primarily improve the sight; that is, they should increase the acuity of vision of those who are near-sighted, astigmatic or exceedingly far-sighted and of most persons past the age of forty-five.

It is, however, an equally important but frequently neglected point that glasses should make seeing more comfortable and eliminate irritation and strain of the eyes.

FACTORS THAT INFLUENCE RHEUMATIC DISEASE IN CHILDREN: BASED ON STUDY OF TWELVE HUNDRED RHEUMATIC CHILDREN

Albert D. Kaiser's, Rochester, N. Y. (Journal A. M. A., September 22, 1934), statistical analysis of the various manifestations noted in more than 1,000 rheumatic children reveals a variety of clinical symptoms. Some children have six or more rheumatic symptoms, while others show only a few definite complaints. Such rheumatic manifestations as pancarditis and rheumatic nodules denote a serious form of rheumatic infection, while the complaints of tonsillitis, pallor and anorexia may be an indication of less serious rheumatic infection. Pancarditis is the most common major complaint in children stigmatized with rheumatic disease. Acute arthritis or rheumatic fever is the second most common rheumatic manifestation. Chorea due to a rheumatic infection was found to occur in 29 per cent of the group. Muscular rheumatism or "growing pains," is a rheumatic manifestation subjected to much criticism. That such symptoms do occur in rheumatic persons is now quite generally recognized. In the reported group 18 per cent of the children gave evidence of chronic pains in the muscles. Rheumatic pneumonia and rheumatic pleurisy are perhaps not always recognized and for that reason the incidence is low. Erythema nodosum was diagnosed in twenty-four cases. Rheumatic nodules and purpura were found only a few times. Rheumatic infection occurs at all ages of childhood but most frequently between the ages of 8 and 10. It occurs most frequently in Rochester during the late winter and spring months. No social or economic factors play any significant part in the control of this disease. Rheumatic infection is essentially a chronic disease and tends to recur in more than 50 per cent of the cases. Recurrences of the disease are much less likely to develop five years or more after the initial infection. Rheumatic infection occurs slightly more often in children whose tonsils have not been removed at the time of the initial attack. The mortality rate is nearly 50 per cent less in children whose tonsils had been removed at the time of the initial attack. Recurrent attacks were not lessened in tonsillectomized children or in those who were tonsillectomized after the initial attack. Hemolytic streptococcus nucleoprotein skin tests were positive in 75 per cent of the rheumatic children as compared to 32 per cent of nonrheumatic children. Tonsillitis or sore throat was the preceding infection in 59 per cent of the rheumatic children. The most severe cases of rheumatic infection followed attacks of tonsillitis and dental infections. Respiratory infections are an important factor in causing recrudescences of the rheumatic phenomena. One may assume the existence of some constitutional susceptibility to rheumatism, but no proof of it is available.

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma.

DR. P. P. NESBITT.....Associate Editor
Medical Arts Building, Tulsa, Okla.

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EDITORIAL

HE CHANGED HEARTS AND HISTORY

Though born in Bethlehem, near Jerusalem, the home of Jesus was in Nazareth, an insignificant village where only mediocre people lived. Indeed, Jesus never lost the sobriquet of his home town. During his ministry he was reminded that he was a small-town man; and on his Cross there were written these words, in Hebrew, Latin, and Greek, so that all might read: "Jesus of Nazareth." He was just a plain man from a small town. But he changed history!

The record tells how he grew in wisdom and stature and in favor with God and man. He probably never went outside the boundaries of Palestine, and learned at home and in the temple the religious precepts of his race. Certainly he was provincial, and when as a young man of twenty-nine he began his public career, the people had never heard of him.

His crowning virtue seems to have been that he was exactly the kind of man he should have been. He lived up fully to his possibilities. Every virtue he espoused he lived out among his fellow-men in completeness and perfection. There was no duplicity in his speech or action. He mixed alike with the wealthy and the poor, with the learned and the ignorant. He was especially fond of children, on one occasion setting a little child before his hearers, saying, "of such is the Kingdom of Heaven." He was a man who enjoyed society; he attended feasts, ate with common people, or with the socially elite, and was a man among men. Pious critics called him a glutton and a wine-bibber.

He also loved the out-of-doors, walked with his followers in the grain fields, chose his illustrations from natural life, speaking of lilies, sparrows, sheep, harvest fields and storm clouds. He mingled with fishermen, and many of his messages were given beside the sea. He was wont to steal away to enjoy meditation with the Father in the quiet stillness of the mountain side. Thus his life was well balanced. He could mix freely and joyously with others or could be alone with his thoughts, ambitions, and temptations.

Whatever he taught, he also lived. His mind and heart were consumed with only a few great themes, which were worth living for and worth dying for. He taught that all men should be bound together in a brotherhood of mutual service and helpfulness, and that forgiveness is indispensable for such a brotherhood; because he well knew that men never could build a better world by holding anger, spite, and grudge. He taught that every man had a soul, that even the outcasts were worthy helping. He taught that goodness did not consist in keeping a set of rules, but in having the right attitude and spirit toward God and men.

Wherever the knowledge of his winsome personality and his teachings have gone, men's hearts have been changed and conditions improved. In his name colleges, hospitals, sanitariums, orphanages, and dispensaries have been built. In his name,

service has been shown to be the greatest thing for which a man can spend his life.

We celebrate his birthday with a festival we call Christmas. In his name we give gifts, sing carols, and extend the doctrines of peace and good-will. Because his spirit lives in our hearts, and because we see life, though dimly, as he saw it, he, through us, still changes history.

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SUMMARY OF COMPULSORY SICKNESS INSURANCE PLAN IN GERMANY, GREAT BRITAIN AND FRANCE*

(Continued from November Journal)

The report of the International Labor office on compulsory sickness insurance (page 173) commences its chapter on "Condition of Benefits" with the following significant statement: "The object of sickness insurance benefit is to compensate, at least in part, for the loss of income suffered by an insured person owing to the incapacity to work, produced by sickness."

As to the service rendered by the medical profession in the United States, everybody agrees that it at least compares favorably with that offered in other countries. Certainly laboratory procedures, such as roentgenray diagnostic procedures, are much more highly developed and readily available in this country. The question of whether the people are able to pay for such service may be debatable, but surely there is no lack of such service. Neither can it be denied that the American physician has contributed his share toward the development of newer methods and betterment of medical practice.

If this be so, then all one can say is that the entire movement (except for the two premises conceded) is unmoral. A movement by people who are balked by an economic system in their efforts to raise wages, who then merely turn to an indirect method of raising wages, disregarding the many consequences of their act, such as a thorough dislocation of the medical profession, destroying traditions of the profession, subjecting the medical profession to the evils of economic strife and barter, cannot be called service. It is admitted by all, even the advocates, that such are the results. "In Germany," declare Simon and Sinai,[8] "the battle between the societies and the medical profession has been practically continuous for fifty years and shows few signs of cessation."

The experience of the British medical profession has not been any better. In spite of the rather authentic reports that the English medical profession is now in favor of sickness insurance, a perusal of the British medical journals makes one sick at heart to see what has become of professional medicine over there. There is haggling of the worst sort going on, and the time of physicians as well as others is just being wasted. Reports of complaints of trivial nature, such as a doctor signing certificates for a poor chronic invalid without seeing the patients as he should have, can be read almost any week. It is such "ponderous questions" that are discussed by full sized committees. All that this tends to do is to lower standards and reduce the doctor to a mere worker, high grade, to be sure, but still a worker, who is buffeted and tossed about by new forces released by a set of inspectors, supervisors, and whatnot.

Were all this done for a true social gain, be it ever so small, this sacrifice might be justified, but all that is attempted, as testified to by the very advocates of the plan, is to raise wages indirectly, and it is quite problematical whether even this is accomplished. Such a procedure, namely, hiding the real objective, and talking about beneficial results to the community, which, they themselves admit, do not materialize, is certainly high-geared propaganda.

Does the worker who is compulsorily insured lose anything by this arrangement, is another question that needs an answer. Fair-minded students of the subject think that there is some lessening of the standard of medical practice, although it must be admitted that there are equally as many who claim improvement instead of deterioration of medical practice.

There is, however, another feature which deserves a great deal of discussion, namely, the psychologic effect on the worker. Lockhart,[7] who is apparently strongly in favor of health insurance, and a member of the British Industrial Health Research Board, quotes Smith and Greenwood to the effect that "the amount of sick absence in any organization is affected profoundly by conditions not of physical but of emotional environment." Further on Lockhart says: "I would go so far as to assert that well over half the

*From report of Pennsylvania Committee published in annual bulletin.

time lost among the insured population due to ill-health is psychoneurotic." He emphasizes that he is not referring to illness, but to loss of time.

If this be so, it is certainly a serious drawback to the insurable population. They pay a high price for the pittance that they receive. It is not only the time that is lost, but it is the lessening of the morale of the population, the cultivating of the habit of leaning too much on someone else, and getting away from the ability of one's own difficulties, a trait that is absolutely essential to make a success of life.

We realize that the advocates of insurance on reading the above statement will raise the cry that this is a new way of pleading for what is contemptuously called "rugged individualism." But whether rugged individualism in industry is desirable or not, it certainly is a most essential requisite for the individual in making adjustment to his environment. It is quite obvious that leaning on someone, in this case the insurance fund, reacts badly on the personality.

The advocates of socialized medicine seem to think, or rather so they state, that the only thing necessary to overcome this bad effect is to divorce cash benefits from the medical service benefits, and they point to England's experience with the problem of "malingering".*

In England the Funds themselves selected medical inspectors, and it is claimed that the cases that hung on too long were reduced promptly to about one-half. Be that as it may, it does not dispose of the problem of psychoneurosis and its role in such a scheme. The very fact that the number of days of sickness in all countries in which sickness insurance is in force has increased so markedly speaks for the fact that psychoneurosis is precipitated by the insurance factor.

The separation of cash benefits merely shifts the issue to other grounds, and all it probably will do eventually is to bring about strife and misunderstanding between the doctors of the insured on the one hand, and the medical inspectors on the other hand. This strife is bound to develop because the former applies the clinical test to the sickness problem, and the latter is bound to develop the so-called insurance point of view.

We have many examples in this country, such as the compensation law cases, the veterans' bureau cases, and finally the disability cases. In all of these, sharp division of opinion among doctors has developed as a result of the differing points of view. We do not mean to convey the impression that this is due to dishonesty on the part of either party; rather, it is due to approaching the problem each from different angle. This possibility, to our mind, constitutes one of the most serious problems of sickness insurance, if for no other reason than our account of the vast number of insurable workers involved.

This problem deserves a much lengthier discussion, but owing to the nature of this report must be curtailed.

What are the effects on the medical profession?

It may be readily admitted that the income of the doctor is apt to improve, for the reason that he receives a more stable income from that part of the population which under the present system contributes very little to the physician's income. But doctors traditionally have not taken their own personal interests into consideration as a decisive factor, nor has it played a role in determining their stand in such matters.

On the other hand, the doctor's freedom of action is curtailed. It seems to us that no matter how we may insist on the elimination of a third party in the scheme of things, such cannot be avoided. It is in the very nature of the set-up to have a third party under one guise or another. The funds must be administered, and this means lay officers, committees, arbitration boards, visitors, and whatnot. In addition, there is the commercial spirit that is bound to creep in once an administration is set up. They immediately become a bureaucratic class with the narrow class psychology. It is inevitable that they should want to succeed, and little by little they develop a standpoint which is diametrically opposite to the medical point of view.

Even the so-called ideal French plan in a comparatively short time of operation —two years—has already brought this out. Hillaire[8] says: "A study of the professional medical journals certainly does not indicate a hymn of praise for sickness

*The writer feels that the term "malingering" is unfortunate. This does not cover all or even a large part of the cases of which Lockhart speaks. Rather, it is the psychoneurotic situation which is released by this arrangement, and not malingering. Malingering as such is rather rare.

insurance. Fatigue from filling out the multiple reports; indirect but real friction with the personnel managing the societies; irritation of somewhat unjustifiable criticisms and suspicions; in brief, the interference between their patients and themselves by the undesirable third party, even though there be no payment by the third party, although there is a reimbursement, and sometimes also a critical and hostile third party."

It is doubtful if even under the ideal set-up of the Michigan plan this difficulty can be avoided altogether. But since this plan is not yet in operation it is idle to speculate on this point.

To summarize this point rather briefly, it is our feeling that the insurance feature inevitably emphasizes the business side of the practice of medicine, and the sad part is that under the system it is unavoidable.

We have already referred to indignities and humiliations experienced by the physicians and the representatives of physicians in their dealings with representatives of other groups. The bickering over trivial matters, the constant criticism of lay personnel in matters of which they cannot possibly have any knowledge, irritates physicians, and sooner or later the very spirit of the profession is bound to be crushed, and instead of the traditional attitude of a noble profession there will develop a cynical, commercial attitute on the part of at least a majority of the profession.

One has but to follow the news in British journals from week to week about the clashes that take place, and this, after 22 years of operation of the law. In Germany, the profession did not cease fighting throughout the fifty years of the existence of the law. In France, the profession, forewarned by the happenings in other countries, has battled courageously and obtained a law which in a measure preserved a semblance of professional relationship. In less than two years, as reports indicate, the Funds little by little are commencing to undermine the entire structure, and sooner or later the profession there will lose heart and give up the fight.

There is still another phase of the question which deserves the attention of the profession, namely, the danger of lay people and borderline semi-professional groups meddling in medical matters. These groups, as soon as they learn a few scientific terms, get the notion that medicine is an open book to them, and that they are authorities on the subject. Reading of the writings of all these advocates of this reform are sufficient to bring this point out.

Rubinow,[9] one of the better informed in such matters, bases a great deal of his argument for socialized medicine on a sample case: A Mrs. C., one of the "neediest cases," which the NEW YORK TIMES used to arouse sympathy and get contributions for its Christmas fund. While it is true that he used it as an example, we must remind him and the others that at least as far as the requisite medical service in the case was concerned Mrs. C. certainly would have had no trouble in obtaining it. It is strange that in the face of experience in other countries Rubinow,[10] in discussing the proposal for socialized medicine that was worked out by the American Association for Labor Legislation, says: "It is safe to assume that had the proposed system been enacted into law 20 years ago, we might have been dealing today with a VERY DIFFERENT WORLD (capitals ours) with a very much different picture of poverty and ill-health."

In truth, is not this a bit of wishful thinking? May we ask, why did not these much to be desired improvements occur in Germany, Great Britain and other countries? We have shown previously that it is universally accepted that health has not improved any in these countries, and that conversely we have not suffered by comparison in the United States. The difficulty is that most of these well-meaning people do not think the problem through. They are so set on boosting their pet theories that precious results unfavorable to them are brushed aside altogether.

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Editorial Notes—Personal and General

DR. D. G. WILLARD, Norman, is reported ill at his home.

DR. and MRS. F. P. von KELLER, Ardmore, have returned from San Antonio where Dr. von Keller attended the Southern Medical Association meeting.

DR. and MRS. E. E. LAWSON, Medford, have returned from Old Mexico, after attending the meeting of the Southern Medical Association at San Antonio.

DR. and MRS. J. A. MUNN, McAlester, have returned from Philadelphia where Dr. Munn attended the Inter-State Post Graduate Medical Association of North America.

DR. E. K. WITCHER, who, because of illness was compelled to give up his work last year, has returned to Tulsa and opened his office in the Medical Arts Building. Before returning Dr. Witcher spent several weeks in Chicago doing post graduate work.

APPLICATION BLANKS are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applications be filled out on the regular form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

News of the County Medical Societies

JEFFERSON County Medical Society met November 5th at Waurika. "Rheumatic Fever" was discussed by Dr. W. C. Burgess, Ringling, and "Urinary Analysis" by Dr. L. L. Wade, Ryan. A round-table discussion followed these two talks.

OKFUSKEE-OKMULGEE County Medical Societies met November 19th at Okemah and presented the following program:

"Phases of Anemia"—Hugh Jeter, Oklahoma City.

"Diseases of the Chest"—L. J. Moorman, Oklahoma City.

BRYAN County Medical Society held its regular meeting with Dr. B. B. Coker, Coker Hospital, at Durant, November 12th. The following subjects were presented and discussed:

"Useful Drugs in the Treatment of Heart Disease"—C. D. Strother, Sherman, Texas. Discussion—D. C. Dunham, Sulphur.

"Common Auo-Rectal Diseases"—Raymond L. Murdoch, Oklahoma City. Discussion—By every doctor present.

SOUTHEASTERN Oklahoma Medical Association held their twenty-sixth semi-annual session December 6th, at McAlester. All sessions were held at the Oklahoma state penitentiary. The following program was presented:

"A New and Successful Method of Reducing High Blood Pressure"—John C. Marshall, Checotah.

"Treatment of Lobar Pneumonia"—Wm. L. Shippey, Wister.

"Intravenous Administration of Hydrochloric Acid"—D. E. Little, Eufaula.

"Interesting Points in Routine Radiology"—James C. Johnson, McAlester.

"Typhoid Fever in Children"—J. H. Veazey, Madill.

"Skeletal Traction in Fractures of the Thigh and Leg"—L. S. Willour, McAlester.

"Practical Demonstration of the Anesthetic Evipal"—J. A. Munn, McAlester.

Clinic, Demonstrating the New General Anesthetic Evipal—J. F. Park, McAlester; J. A. Munn, McAlester.

SOUTHERN Oklahoma Medical Association held their twenty-fifth quarterly session December 4th, at Ardmore. A six-o'clock dinner was served after which the following program was presented:

"Phermic Fever, Illustrated With a Case of Pachymeningitis Hemorrhagica Interna"—D. C. Enloe, Sherman, Texas. Discussion—J. H. Holland, Madill; D. Long, Duncan.

"Cholelithiasis and Cholecystitis"—W. H. Livermore, Chickasha. Discussion—G. L. Johnson, Pauls Valley; F. P. von Keller, Ardmore.

"Dermatological Manifestations of Syphilis"—Darrell Duncan, Oklahoma City. Discussion—Chas. Rayburn, Norman; C. A. Johnson, Wilson.

"Undulant Fever—Symptoms"—F. Y. S. Moore. Discussion of Treatment—Lea A. Riely, Oklahoma City.

Medical Ethics—Louis H. Ritzhaupt, Guthrie.

"Talipes-Equinovarus—Treatment From Infancy to Thirty Years"—Wade Sisler, Tulsa. Discussion—W. J. Weedn, Duncan.

"Trans-Urethral Prostatectomy"—I. A. Fulsom, Baylor Hospital, Dallas. Discussion—A. R. Suggs, Ada; R. C. Sullivan, Ardmore.

"Tuberculosis," with Lantern Slides—Floyd Moorman, Oklahoma City. Discussion—F. E. Sadler, Sulphur; R. M. Burke, Sulphur.

DOCTOR LLOYD MELVILLE SACKETT

Dr. L. M. Sackett, Oklahoma City physician for twenty-five years, died November 12th, after a week's illness. Dr. Sackett was 54 years old.

Born in 1880, graduating, Illinois, 1903. After studying at the Polyclinic College, New York City, Dr. Sackett began his practice in Wilburton in 1905. Shortly after coming to Oklahoma City in 1909 he became staff physician at Wesley Hospital; for seven years he was assistant professor of gynecology at the University of Oklahoma School of Medicine.

Dr. Sackett was a member of the Masonic lodge, the American Legion and was affiliated with Alpha Kappa Kappa medical fraternity.

He is survived by his wife, one daughter and a brother.

DOCTOR J. L. MOYSE

Dr. J. L. Moyse, City Health Officer of Okemah, Okfuskee County, passed away at 4:05 o'clock Monday morning, October 22nd, at his home in Castle, following a brief illness from coronary sclerosis. He is survived by his widow, four daughters and a son.

Dr. Moyse was born in Greenville, Mississippi. He was a graduate of Rush Medical College in Chicago and came to Indian Territory to practice after finishing school. He served as a private in the Spanish American War, and in the Medical Corps during the World War.

Dr. Moyse was a member of the Okfuskee County Medical Society and Oklahoma State Medical Society.

Funeral services were held at the First Christian Church, Okemah, Okla., Tuesday, October 23rd, with his former pastor, Reverend Homer Haislip, Russellville, Arkansas, officiating. At Highland Cemetery, in Okemah, the Spanish American War Veterans, of which Dr. Moyse was Commander; the American Legion, and National Guard carried out the military services.

ATTENTION!

Your attention is particularly called to the advertisement of the Lumbermen's Mutual Casualty Company on page 12 of this issue of the Journal. Their advertised rates are much lower than other companies doing business in the state at this time, and careful investigation of this company shows them to be absolutely responsible. We feel that in bringing this advertisement to your attention we are rendering a good service to our membership.

NEURITIS

Stanley Cobb and Howard C. Coggeshall, Boston (Journal A. M. A., November 24, 1934), state that the group of diseases caused by viruses is becoming rapidly larger as the problem is better understood, but knowledge is still rudimentary in this field. Many of these diseases may be accompanied by peripheral neuritis, usually as a late complication; but when the virus attacks the spinal cord and nerves primarily the opposite is true. For example, the tenderness of the muscles in the early stages of acute anterior poliomyelitis is probably due to the beginning of degeneration of the neuron including the axon; thus, pathologically speaking, there is a neuritis. The acute infectious or acute febrile type of polyneuritis is becoming a well recognized entity. There is evidence that this is due to a virus, probably specific, but as yet unknown. A long list may be made of infectious diseases known to be complicated by polyneuritis. The obvious inference is that absorption of the toxins formed by the invading organism causes the neuritis. The reasoning, however, does not hold, for neuritis is usually a rare complication of these diseases, and other factors must be evoked in order to explain the occurrence. Of course the neuritis following "serum sickness" is the best evidence available that bacterial toxins cause neuritis. In typhoid and other prolonged fevers, vitamin deficiency must be considered as a possible etiology. In diseases that may be due to pyogenic organisms the neuritis rarely develops early in the course of the illness. Generally it is late, when the infection has become chronic, and then abscess formation with absorption from a chronic focus must be looked for and treated. A chronic neuritis, especially if accompanied by arthritis and myositis, may well be due to focal infection of this sort; infections of tonsils, teeth or gallbladder may be implicated. A mild neuritis is often overlooked when it occurs with a conspicuous arthritis. Not infrequently acute infection acts as a precipitating factor in neuritis owing to deficiency of vitamins; especially in children the acidosis resulting from fever may determine the onset of lead paralysis. Many polyneuritis syndromes are merely clinical variations of one etiologic group. The neuritis of diabetes may perhaps be caused or precipitated by the dietary restrictions imposed on the patient. Little is known of the syndromes known as "recurrent" and "chronic progressive neuritis," but the descriptions suggest an etiology based on vitamin deficiency. The neuritides associated with myxedema and hematoporphyrinuria apparently have a metabolic origin. The neuritis caused by lead and by arsenic is well known. Modern industry has increased the hazard to which workers are exposed. Eighteen substances are said to cause polyneuritis. The extraordinary specificity of some of these substances is emphasized; certain of them always appear to attack one special pair or group of nerves. Ethyl alcohol is not a neuritic poison but, when taken as a beverage, either causes dietary deficiency and hence beriberi or causes neuritis because of impurities. The local neuritides caused by pressure and trauma are largely surgical problems. Local edemia and fibrosis are common etiologic factors often overlooked. The local neuritides caused by infectious organisms and their toxins are rare except in the case of diphtheria.

EPIDEMICS OF INFLUENZA AND GRIP HAVE MADE PUBLIC "SINUS CONSCIOUS"

Today the public is "sinus conscious," and sinus inflammation is much more common than ever before in the world's history. The devastating epidemic of grip and influenza that have occurred periodically since 1918 are largely responsible for this condition, according to Dr. Walter A. Wells, who answers the question, "What Is Sinus Trouble?" in the October Hygeia.

Every head cold is complicated with some congestion of the nasal sinuses, and if a simple cold does not clear up in five or six days, it is probable that there is inflammation in one or more of the sinuses. The important thing is that the germ laden secretion should not be left locked up in the sinus interior too long; delay in consulting a physician may result in serious consequences.

Another characteristic of sinus trouble is that an already chronically inflamed sinus is apparently always awaiting another chance to worry its victim. A sinus cavity once attacked by germ life is more liable after the attack to be inflamed in the same way again, and every time a patient has an attack, he is that much weaker to withstand another onslaught.

The same methods that build up resistance to colds will do much to prevent sinus trouble. But even though a person is careful about fresh air, exercise and diet, colds, grip and influenza may be contracted in crowds. Even then the secondary infection of the sinus may be prevented, but if all efforts fail, the physician should be consulted at once if one does not wish to become a chronic sinus sufferer.

ABSTRACTS • REVIEWS • COMMENTS AND CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City.

Painful Heels Among Children (Apophysitis). Henry W. Meyerding and Walter G. Stuck. J. Am. Med. Ass'n, CII, 1658, May 19, 1934.

Since the discovery of roentgenrays, a number of clinical syndromes have been shown to be specific diseases. The pathological physiology of the bone as shown by the roentgenograms has given an understanding of the disease process in Osgood-Schlatter disease, Kohler's disease, Legg-Perthes disease, Buchmann's disease, and Freiberg's disease. The roentgenogram has made it apparent that there are marked similarities in the general pattern in these diseases.

A seemingly uncommon epiphyseal involvement is calcaneal apophysitis, as to date only forty cases have been reported in the literature. Only twenty-one have been seen in the Mayo Clinic—in two girls and nineteen boys. The age range was from seven and one-half to seventeen years; the average age was ten and two-tenths years. There was bilateral involvement in fourteen cases.

The apophysis is both a pressure and a traction epiphysis. It is subject to direct trauma as well as to a constant lateral pull from the attached muscles.

The condition is seen most commonly in vigorous boys between the ages of eight and twelve. A history of trauma may be obtained. The condition is usually bilateral. On examination, the heels are found to be tender posteriorly and there may be some lateral thickening at the insertion of the tendoachillis. Often the children are overweight or present some gross evidence of glandular disturbance.

The characteristic feature is the change noted on roentgenographic examination. In the lateral view, the apophysis is seen to be fluffy, moth-eaten, somewhat flattened, or partially fragmented, according to the stage of the disease. All of the pathological changes are dependent directly or indirectly on the disturbance in circulation. Since the apophysis appears late in the tenth year and unites at the age of seventeen, the disease is confined to this short period.

Treatment is palliative and extremely simple and consists of the application of local heat and massage during the acute stage. The heels are elevated to relieve the tension on the gastrocnemius muscle. In severe and resistant cases, immobilization in plaster may be necessary.

It is common for such a process to take place in the heels of healthy children, but the symptoms are often so mild that no roentgenographic examination is made; hence, the diagnosis is not absolute. Due to the above facts, it is concluded that the disease is not an unusual one, but passes undiagnosed because of the mildness of the symptoms and because roentgenograms are not taken.

Late Results of the Lavall Operation and the Bone-Peg-Insertion Operation. N. I. Blinov. Orthopaedia i Travmatologia, IV, 1, 1933.

A thorough study of the Russian and foreign literature shows that the late results of these operations in tuberculous joints are less favorable than has been reported. The personal observation of the author prompts the following conclusions:

The autoplastic transplantation of a bone peg in tuberculous joints does not alter the development of the disease. In the majority of cases, a temporary subjective improvement has been noticed. The presence of the bone peg does not improve the atrophy of bone. The introduction of a bone peg can be justified in old tuberculous processes, but in these cases there are better methods of producing an ankylosis of the joints.

The Clinical and Roentgenographic Interpretation of Lumbosacral Anomalies. Albert B. Ferguson. Radiology, XXII, May, 1934.

Lumbosacral anomalies produce symptoms only through faulty mechanics. Faulty support or faulty relationship produces abnormal stresses or pressures. Whether an anomaly is due to faulty support or to faulty relationship, its mechanical weakness can be compensated by muscles and ligaments. As long as these soft tissues are of sufficient strength and tone to meet the conditions without fatigue, there are no symptoms—the patient is compensated.

Muscles and ligaments that are thus occupied in supporting or protecting the lumbo-sacral area have less than normal capacity for meeting extraneous loads or stresses, as a certain portion of their total capacity is already in use. Hence these tissues are more liable to be exceeded, in which event the patient is decompensated and must be relieved by rest in order that these injured tissues may recover and regain a state of compensation.

Decompensation occurs in several ways, which the author discusses in detail.

The conception of compensation and decompensation which has been stated points the way for the treatment or prophylaxis of these conditions. For mild cases it is essential to build up muscle tone and power sufficiently to meet the stresses—that is, to keep the patient compensated.

The fusion operation, to eliminate motion and provide stability, is indicated when the attacks become so frequent and so severe that it becomes worth while for the patient to give up the time necessary for the operation in order to put an end to the attacks.

Many individuals have chronic arthritis in the spine as well as lumbosacral anomaly. Such cases are not favorable for surgery, as complete relief cannot be expected, due to the arthritis in areas which are not fused.

There is no positive differentiation by physical examination between lumbosacral anomalies and so-called sacro-iliac strain. The results of surgical treatment indicate that, when there is no definite sacro-iliac abnormality visible in the roentgenogram, the

lumbosacral area, rather than the sacro-iliac joints, must be suspected as the source of symptoms.

Our spines were developed for the four-footed position and are not yet adapted to the erect position, so that mechanical weakness at the lumbosacral area is usual rather than exceptional. We must consider the lumbosacral area not as normal or abnormal, but as mechanically sound or mechanically unsound. Stability, or sound mechanics, at the lumbosacral area depends in a great degree on the articulations of the lumbosacral arch. Considered mechanically, probably the worst type of facets are those which are asymmetrical.

The fifth lumbar vertebra may be displaced anteriorly on the sacrum. Although attacks of severe pain may be due to increase of displacement, most of them are due to strains which occur because of the mechanical weakness.

Posterior displacement of the fifth lumbar vertebra is one of the most common of the significant lumbosacral anomalies. The mechanism of the displacement is as follows: On hyperextension, the lumbosacral joint being hypermobile, the fifth lumbar vertebra glides backward on the first sacral vertebra—an exaggeration of the normal motion. Then on flexion, instead of gliding forward, the fifth lumbar vertebra tilts forward, being caught in the position of posterior displacement. The displacement may often be reduced by reversing this process, extending the spine, and then gently flexing it with traction of the pelvis.

In a lumbosacral structure which is mechanically sound, the lumbosacral angle is more acute when standing then when lying, due to slight sagging forward of the pelvis on standing. If, however, there is a mechanical weakness which is producing the symptoms, the patient, on standing, tilts the pelvis backward so as to reduce the lumbosacral angle and bring the sacrum more under the line of the weight thrust—a protective reaction. For this reason, the lumbosacral angle may appear worse in a normal subject when standing than in one who has lumbosacral weakness.

The anteroposterior mobility of the fifth lumbar vertebra should be determined, for the reason that abnormal mobility at this point is just as much a mechanical weakness as is a bony anomaly. The amount of mobility is determined by making true lateral views in flexion and in extension. Fifteen or more degrees of anteroposterior motion, or a movement of the spines of the fifth lumbar and first sacral vertebrae of more than one-half inch in relation to each other, constitutes sufficient mobility to be a cause of symptoms.

INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N Walker, Oklahoma City

By HUGH JETER, M.D.

The Specificity of the Complement Fixation Test for Amebiasis. Emil Weiss, M.D., and Lloyd Arnold, M.D., Chicago, Ill. American Journal of Digestive Diseases and Nutrition, Vol. I, October, 1934.

This report adds some valuable details or specific information concerning the complement fixation test. The following conclusions are given:

1. Alcohol and acetone extracts of E. histolytica yield a specific antigen. Specific antiamebic serum can be produced by the injection of this antigen.

2. The beef-heart lipoidal antigens used in the Wassermann and Kahn tests can give nonspecific reactions not only with serum of amebic dysentery patients, but also with immune serum produced from various protozoa. These beef-heart lipoids can produce antisera which can be shown to contain nonspecific antibodies.

3. When complement-fixation tests are positive for both amebiasis and syphilis (Wassermann) the Wassermann reaction can be checked by using a specific spirochete antigen instead of the beef-heart lipoids.

The Monocyte, Monocytosis, and Monocytic Leukosis; a Clinical and Pathological Study. Charles A. Doan, M.D., F.A.C.P., and B. K. Wiseman, M.D., Columbus, Ohio. Annals of Internal Medicine, Vol. 8, October, 1934.

In this the authors discuss:

The Monocyte and the Cells of the Blood.

The Monocyte and the Cells of the Connective Tissues.

The Monocyte in Pathologic States.

The Monocyte in Leukemia.

Chronic Monocytic Leukemia.

Monocytic Leukemia With Aleukemic Phase; Leukemia Cutis.

Acute Monocytic Leukemia.

The Problem of Mixed Leukemia.

Etiologic Considerations.

Several cases are described and clinical as well as laboratory findings are mentioned.

New conceptions of the monocyte and its importance in different diseases are presented.

The charts and plates are exceptionally good.

A Histologic Study of the Liver in Patients Affected With Peptic Ulcer. Maurice A. Schnitker, M.D., and George M. Hass, M.D., Boston, Mass. American Journal of Digestive Diseases and Nutrition, Vol. I, October, 1934.

The authors attempt to add support to the existing evidence that there is some association between the disturbance of the liver or its secretions and peptic ulcer.

Post mortem material in the Peter Bent Brigham Hospital, covering an eleven-year period, 1922-1933, was utilized for study. It was found that fourteen of the seventy-two cases of cirrhosis of the liver (19.5%) has associated typical ulcer of the stomach or duodenum. It was found that fifty of the one hundred ulcer cases had definite histological change in the liver.

On further study based on the type of changes in the liver there were not only more patients with hepatic injury in the series than in the central group but also the ulcer cases showed more definite lesions. A study of the pancreas in ulcer patients gave no significant information.

The conclusions seem to indicate that there may be at least some functional disturbance such as is not always demonstrable histologically in which peptic ulcer and liver pathology are associated.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

The Conjunctivoglandular Syndrome of Parinaud. Gifford and Dillon, Chicago. Archives of Ophthalmology, October, 1934.

The writers give their opinion that in cases formerly designated as Parinaud's conjunctivitis should now be called the conjunctivoglandular syndrome of Parinaud, since the term Parinaud's conjunctivitis describes merely a syndrome of signs and symptoms.

Verhoeff has conducted more research than any other American on this subject and has devised a delicate method for the detection of the organism. When his method is followed carefully he finds a thread-like organism. With the exception of one other case reported by the authors, the organisms found by Verhoeff have been found only in material stained in his laboratory. Some European authorities regard Parinaud's conjunctivitis as a form of tularemia and suggest that the organism described by Verhoeff is probably due to the tubercle bacilli of animal origin. Parinaud believed that the infection was of animal origin and cited instances of patients suffering from this disease as having previously had contact with a cat. In one of the cases of Dr. Dillon, a farmer's wife, gave a history of having had contact with cats having "sore eyes".

The third case of the authors is reported: A boy, age 11 years, for four days had noticed a swelling of the eyelids and right side of the face and it was with difficulty that the mouth was opened wide. There was enough discharge to stick the eyelids together of mornings. The previous history was essentially negative. There were papillary swellings near the upper part of the fornix conjunctiva and near the middle there was a flat mushroom-shaped granulation about 3 mm. in diameter. The preauricular and cervical glands were enlarged and sensitive. The blood count was: R.B.C. 4,400,000; W.B.C. 8,000; 72 polymorphonuclears; 20 lymphocytes; 6 large mononuclears and 2 eosinophils. Agglutination with bacillus tularensis on the tenth day was negative. The history of animal contact was negative except playing with a dog which had "a lump under the jaw." In six weeks with the use of antiseptics the conjunctiva and glands were again normal.

On the eighth day the largest granulation on the conjunctiva was removed for microscopic examination. Verhoeff's method of staining was employed and among other things there was found a thread-like mold, some of which appeared to show true branching, but this appearance may have been due to the crossing of two threads. A definite radial arrangement of a mass of these threads was shown at one place.

The opinion held by the writers is that the thread-like organism is a member of the group of trichomycetes. Due to the fineness of the threads, their branching and radial arrangement, streptothrix actinomyces is suggested rather than leptothrix.

Two Cases of Facial Paralysis "A Frigore," Cured by Decompression. Dr. P. G. H. Sander, Port Said. The Journal of Laryngology and Otology, August, 1934.

Innumerable theories have been advanced to explain the anatomical basis of the chief symptoms of Bell's palsy or as the author terms this condition, "paralysis a frigore."

According to Dr. Sander there is a similarity in the principle of procedure in glaucoma and Bell's palsy. The etiological factor of both conditions remains idiopathic despite years of research work by leading authorities on each subject. It is a recognized fact that certain procedures by the competent ophthalmic surgeon will relieve the intraocular tension, at least temporarily. The same fundamental truth or doctrine influenced the imagination for the inception of the decompression of the nerve in the optic canal for the relief of a neuritis. Decompression of the fallopian canal for relief of Bell's palsy inevitably followed. Other aural surgeons have performed this operation as early as 1908 with good results. Regardless of the cause every case of Bell's palsy, unless decided improvement is manifested in a few days, should be considered surgically. Some authorities claim that when this condition occurs that no delay is justifiable; it is as much of an emergency as an acute appendix. Obviously the earlier a decompression is done, the better the expectation.

Treatment must be given that will remove the infection and inflammation from the region of the middle ear and the mastoid cells. There may be only a chronic catarrhal tubal condition with never a history of an acute infection and clinical examination may be entirely negative. Other conditions such as acute or chronic otitis media, infected mastoid cells, periostitis or osteitis of the fallopion canal, abortive or latent forms of otitis, catarrhal otitis of mild order, may produce a perineuritis and neuritis of Bell's nerve. Experience shows that a nerve may lie in direct contact with pus for quite a period of time and suffer no injury but this is not true of pressure. If there is pressure for very long there will be injury to the nerve and the resulting loss or impairment of function. An example of this is cited in the "chloroform paralysis" or the "Saturday evening paralysis" when the function of the musculo-spiral nerve is temporarily impaired by the pressure of the head or body on its trunk for a few hours, during profound sleep from an anaesthetic or intoxication.

Two cases are reported: A nurse, age 46, after exposure to a cold north wind, noticed in the following days that she had a headache; a moderate rise in temperature; that the left arm became numb; that pain was experienced on the left side of the neck; that seven days afterwards there was a loss of taste for grapes on the left side; that on the tenth day of illness a twitching on the left side of the face began on the forehead and progressed to the eyelids, cheek and mouth; and on the thirteenth day she realized that the left side of her face was paralyzed. A decompression was done and six hours after the operation improvement began.

The second case was that of a Danish seaman, age 45, who, nineteen days previously, suffered exposure in the North Sea to a very cold wind. Three days after entrance to the hospital paralysis of the facial nerve was complete. Examination, among other things, showed a mild otitis catarrhalis of the affected side. A decompression was done and ten days later the paralysis had completely disappeared. An extensive bibliography is appended to this interesting article.

Atypical Mastoiditis. Case Report. Dr. Hyman Sporn, Brooklyn. The Laryngoscope, March, 1934.

Comment is made as to the variety of the nomenclature which designates a mastoid infection which does not yield the typical signs and symptoms of this disease. A resume of the classical mastoid infection

is given from its beginning to the time of operation, including signs and symptoms, haematological and roentgenological findings.

This condition is more commonly found in infants and young children. Operation may show extensive destruction including dreaded complications which were in no way evidenced by the clinical picture. This type of case may easily result in a fatality if the greatest amount of care and judgment are not exercised.

It is not impossible to have a mastoid infection resulting from trauma or by way of the blood stream. Supposedly the most common way is by means of the infection extending from the pharynx up through the eustachian tube, through the middle ear and into the antrum and mastoid cells. Due to a small opening from the middle ear into the mastoid cells the infection may clear up entirely in the middle ear without any drainage occurring through the tympanic membrane and become localized in the antrum and mastoid cells. The blood and lymph stream and the gradual destruction and eating away of adjacent bone may cause further dissemination of the infection.

The case reported is that of a man, age 40, who had a slight discharge from the left ear early in January and was finally operated for a suppurative mastoiditis on May 31st. February 20th there was a profuse creamy discharge from furuncles on the floor and posterior canal wall. The ear-drum was present and normal in appearance. Tuberculosis and syphilis were ruled out at this time and the roentgenogram was negative of the mastoid region. The external otitis at this time looked like an ersipeloid infection. The discharge continued until March 11th, when he was sent to the hospital and these areas of infection in the external canal were drained. He remained in hospital a week and was apparently completely healed in ten days. On March 28th there was a swelling behind the ear and on pressure pus exuded into the external auditory canal. The diagnosis at this time was a cellulitis of the soft tissues with a sinus into the external auditory canal. On April 20th he was again admitted to the hospital for observation. His chief complaint at this time was slight pain over the mastoid region. There was a small fluctuating mass over the region of the antrum. The sinus was still present draining into the external auditory canal. The roentgenogram was again negative. The blood count was W.B.C. 14,000 with 56 polymorphonuclears. April 24th the small mass was incised and a small amount of pus found. He continued in about this condition until May 20th when another roentgenogram showed a breaking down of the cells of the left mastoid. Operation showed a perisinus abscess, periphlebitis, extensive necrosis of the mastoid process near the zygoma and over the canal wall and of the dural plate. The pus cultured staphylococcus albus and aureus. During the entire course of the infection he had temperature only two days, 100 degrees for the first two days after operation on the mastoid. The recovery was uneventful.

The main points of interest in this case are: (a) History. (b) Absence of changes in the membrana tympani and middle ear. (c) Absence of pain and constitutional symptoms. (d) The presence of a cortical perforation into the membranous canal and sinus involvement.

Bacteremia and Acute Infections of the Upper Respiratory Tract. Howard C. Ballenger, M.D., Chicago. Archives of Otolaryngology, October, 1934.

The etiology of the common cold is again discussed. It was in 1914 that Kruse first advanced the theory that they were probably due to a filtrable virus and were produced by means of a bacteria-free filtrate. His results as reported lack the confirmation of many others doing a similar line of research. The more probable explanation is that a filtrable substance produces activity of the pathogenic organisms which are usually present in the nose and throat. Some of the pathogenic bacteria which may be found here are: streptococci, pneumococci, staphylococci, certain gram-negative cocci and the influenza bacillus. It is less likely that influenza may be caused by a filtrable virus than the common cold.

That hemolytic streptococcus is the predominating organism in a high percentage (84-90) of cases of mastoiditis is confirmed by Soper and Dynes as well as by Kopetzky and Hadjopoulos. This hemolytic streptococcic infection may be extended from the nose and throat by continuity of tissue causing sinusitis and mastoiditis, by the lymphatics causing cervical adenitis and retropharyngeal abscess and through the alimentary track and the blood stream.

In 1932 blood cultures taken from 293 apparently healthy people by Reith and Squier showed a marked increase in the number of positive cultures obtained during the winter months when nose and throat infections were predominant. Some of the probable causes of failure to obtain a positive blood culture are: that the blood stream may have an insufficient number of bacteria present; that the bacteria may not be present in the blood stream at the time the blood was withdrawn; the use of the wrong culture medium or not being left to grow a sufficient length of time; that the liver, spleen, lungs and finer capillaries may have removed most of the bacteria before the blood reaches the vein of the neck or arm from which the blood is usually taken; or the strain may be in a filtrable phase or react in an unuusal manner to the staining. It is suggested that the percentage of blood cultures would be higher if the blood were to be taken from an artery.

Many times attacks of acute appendicitis or acute peritonitis occur following a sore throat.

It is obvious that any infection of the nose and throat due to hemolytic streptococcus should not have operative interference during its acute stage. In 28 strains of hemolytic streptococcus it was found human fibrin was liquefied or dissolved in a short time. This might account for post operative bleeding a few days after a tonsillectomy as well as the frequent invasion of the bacteria into the surrounding tissues and blood stream.

In case of an extension of a hemolytic streptococcic infection into the middle ear, the author believes that a paracentesis should be done as soon as there is bulging. This may produce a temporary bacteremia. If the extension of the infection continues and mastoiditis develops there can be no hard and fast rule as when to operate as each case must be judged separately on its individual merits. He advises waiting at least three weeks if possible.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City.

The Principles of and Results After Amputation for Diabetic Gangrene. By Leland S. McKittrick and Theodore C. Pratt. Annals of Surgery, October, 1934, Page 638.

Dr. Kittrick is one of my good friends and I am familiar with his excellent work in diabetic surgery at the Deaconess Hospital in Boston. The Deaconess Hospital is the hospital of Dr. Joslin, the great dia-

betic specialist. Because of his association with Dr. Joslin, Dr. McKittrick has had an unusually wide and varied experience with the surgical complications of diabetes.

In this article he reports 396 patients who were operated for 497 separate lesions of the lower extremities during the eleven years ending December 31, 1933, with a mortality of 11-4/10 per cent; 312 of these conditions were due to arterial deficiency with a mortality of 14-1/10 per cent, whereas in 185 cases where the arterial supply was satisfactory, the mortality was only 7-2/10 per cent.

The mortality following 326 major amputations is 15 per cent.

Most of the successful toe amputations were on feet with good pulsation in the dorsalis pedis arteries, or with other evidence of good blood supply.

With 32, or 56 per cent, of the 57 deaths due to infection secondary to the local condition, the need for early and proper operation seems evident.

Excluding the 32 deaths due to extensive infections on admission, which resulted in pre-operative septicaemia or extensive post-operative infection, a mortality of 5-3/10 per cent was obtained. This is suggested as the approximate mortality from unavoidable causes in this group of bad risk patients. The mortality following major amputation can approximate this only when cases are seen earlier, and the time for and type of operation to be done is accurately selected. The mortality following toe amputations ought not to exceed this by more than a small margin.

A mortality comparable to this "basic" mortality is reported from the 73 cases operated upon in 1933 and for the 185 toe amputations reported during the past eleven years.

Results following amputations at various levels are considered both from the immediate and late result.

Amputations through the lower leg healed satisfactorily in properly selected cases. When this amputation has been done for gangrene, thrombosis in the popliteal or femoral arteries may follow and require amputation through the thigh at a later date.

A lower leg stump adds greatly to the facility of using artificial limbs, but there is no justification for the increased risk and prolonged hospital stay following such an operation unless the general condition of the patient makes subsequent use of an artificial limb probable.

A Gritti-Stokes amputation gives an excellent stump. It is particularly well adapted to one who must be on his feet for long periods of time. The operation is more hazardous than a supra-condylar amputation and is followed by a somewhat longer hospital stay.

The subsequent activities of diabetic patients, operated upon for gangrene, are sufficiently limited so that a good supracondylar amputation will give a satisfactory functional result, and if done with a circular incision without flap is the safest of all amputations.

Painful stump has not been experienced. Result following cauterization of the nerve and alcohol injection have been equally satisfactory.

Late mortality and morbidity in this group of patients is frightful. Of 188 patients operated upon for gangrene, two or more years ago, only 64 are still alive, and 22, or 34 per cent of these have bilateral amputations.

Bilateral amputation is frequently followed by relief from cardiac symptoms and is compatible with a useful existence and a happy household, particularly if the patient is a woman.

Except for the patients under 60 years of age, a bilateral amputation usually means a wheel chair existence.

In discussing this paper Dr. Lane of Loyola University in Chicago made a very interesting observation in regard to gas bacillus infection. He said that one of his associates, Dr. Gage, had worked out the fact that contact with the skin from wool is the important factor. They had never seen a gas bacillus infection in the summer time when linen clothing was worn. In the winter in injuries where the men were wearing wool clothing gas bacillus infection was not infrequent. The diabetic, while he is waiting for the line of demarcation, usually has his leg wrapped up in a blanket. He cited one patient who was sleeping between blankets and a hypodermic injection was responsible for the gas bacillus infection. Several of their diabetic gangrene patients had amputations which were followed by gas infections and invariably in those patients where attempts had been made to keep the limb warm by wrapping it in a blanket. They cultured new blanket wool and new clothing wool and found in all instances that they were able to cultivate the gas bacillus from ordinary or socially clean wool, not necessarily surgical wool.

—LeRoy D. Long, M.D.

Cancer and Prolapse of the Uterus. Frederick V. Emmert, M.D., and Joseph B. Taussig, M.D., St. Louis, Mo. American Journal of Obstetrics and Gynecology, Vol. 28, No. 4, October, 1934.

These authors are reporting 10 cases of complete prolapse of the uterus, four of which have been complicated by carcinome of the cervix. The case histories are given.

The report is made because of the fact that in the literature it is remarked that carcinoma hardly ever develops on a prolapsed uterus. This, for some time, has been mentioned as one of the questionable factors in application of the theory that chronic irritation is an important factor in the causation of cervical cancer.

These authors justly feel that carcinoma of the prolapsed uterus is not as rare as we have been led to believe. Upon the basis of their report they also minimize the efforts of numerous writers who have attempted to justify the existence of prolapsed uteri with erosions and with no cancer, at the same time stressing the importance of chronic irritation as a predisposing cause of cervical cancer. They also point out that apparently cancer upon a prolapsed uterus is not very active. They give their reasons for this belief.

They feel that cases of cancer found upon prolapsed uteri should first be treated by x-ray and radium followed in three to six weeks by vaginal hysterectomy.

Comment: This is a very interesting and important report, particularly in light of definitely determining the relation between chronic irritative lesions of the cervix and cancer of the cervix, because this general belief of the prolapsed uterus being free from cancer has been one of the weak links in the clinical application of the principle.

—Wendell Long.

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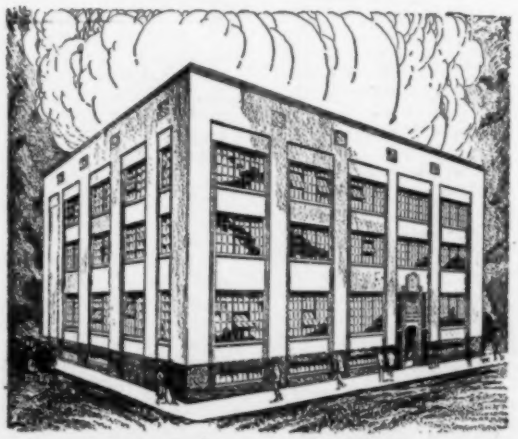

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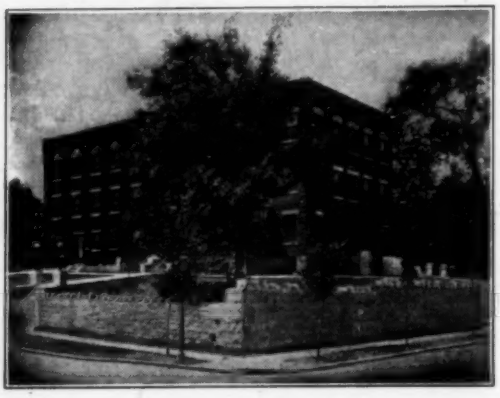

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